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NORTHFLEET URBAN DISTRICT
COUNCIL

BIENNIAL REPORT

on certain matters

concerning

PUBLIC HEALTH


for the years

1962 & 1963

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^{*}R.G. or local = provided by Registrar General or compiled locally.



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URBAN DISTRICT OF NORTHFLEET

Report for the years 1962 and 1963
on certain matters concerning Public Health

10th January, 1966

TO THE CHAIRMAN AND MEMBERS OF THE COUNCIL

Mr. Chairman, Ladies and Gentlemen,

As soon as practicable after the end of each year it is the duty of the medical officer of health to make to the local authority a report for that year on the sanitary circumstances, sanitary administration, vital statistics and on any other matters on which it is considered desirable to report.

A considerable time has elapsed since the end of the period under review. One explanation is that the obtaining of the relevant facts and figures and the extraction of a concise interpretation or presentation for the local appraisal of public health is time consuming.

Whether such expenditure of time is justifiable is open to question. The reasons include the following: the information gleaned from a district of this size is not easy to interpret; apart from local interest its value is limited; the chance of a significant finding being revealed is remote; should such information be found the chance of it being put to use is not good - witness the affairs of smoking and fluorine; too much interest in health might perhaps be unwholesome; the contents of the report are of little consequence for fulfilment of the statutory duty; there is already an over-abundance of written matter.

Nevertheless it is expedient that one local office should do what it can to record local public health affairs for future reference. Local attitudes can then be guided by local facts. Furthermore the medical officer of health has a duty to inform himself on matters likely to affect the public health of the district he serves. The preparation of this report is a means for such self-instruction. The notes, tables and appendices are somewhat copious but they are not more so than the case-notes of one abstruse case in hospital and refer to over twenty-thousand persons.

This report contains much material provided by officers of other departments and other authorities or organisations. I thank these colleagues for their co-operation.

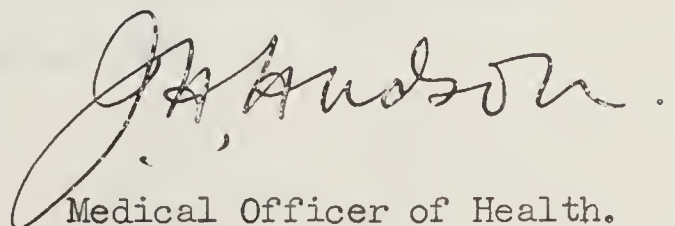
The information on most environmental matters largely concerns the work of the Council's public health inspectors upon whom so much of the maintenance of sound standards of environmental hygiene depends.

The presentation of the statistical material is a product of the patience of the senior clerical assistant.

On behalf of my colleagues in the public health office and myself I wish to thank the Chairman and Members of the Public Health Committee for their support and interest during the period under review.

I am, Mr. Chairman, Ladies and Gentlemen,

Your obedient servant,


Medical Officer of Health.

1962-63

S U M M A R Y

The population continued to increase but the rate of increase showed a trend downwards due to a lessening of the inflow of residents from elsewhere.

However the natural increase was the greatest for at least 10 years.

The upward trend of the birth rate continued and the 1963 rate was the highest for many years.

The adjusted death rate in 1963 was less than in 1962.

The crude death rates for coronary disease and cancer of the lung were less than the rates for London.

The death rate of Northfleet residents from motor vehicle accidents was the same as that for England and Wales. The four deaths of 1962 were pedestrians.

There was a death from burns caused by an accident in the home.

The 1962-3 winter was exceptionally severe but it did not appear to have much impact on available statistics concerning health.

In 1962 live polio vaccine was introduced. By the end of 1963 6/7ths of the population of primary school children had received four doses of polio vaccine.

Early in 1962 smallpox occurred in this part of England. Compared with other years the number of persons vaccinated or revaccinated against smallpox was large. The increase was as a result of public demand.

Certain questions relating to smallpox are discussed.

The number of persons on the tuberculosis register in the years 1962-63 showed a downward trend.

Influenza appeared in the first quarters of both years: Virus B in 1962, Virus A2 in 1963.

In 1963 the Northfleet Smoke Control Order No. 2 came into operation.

Air pollution measurements showed that in the fog of December 1962 the smoke and SO₂ concentrations here were similar to those of other areas on the periphery of Greater London.

Dust caused exceptional nuisance in 1962.

Air pollution and dust nuisance on Thames-side are reviewed.

19 houses were closed or demolished in 1962.

COMMENTARY

POPULATION The upward trend in the population continued but the increase was not as great as in the previous two years. The newcomers were fewer but the natural increase was expanding.

	Births	Deaths	Natural increase	Population	Rate of natural increase
1954	315	199	116	19450	6.0
1955	300	200	100	19630	5.1
1956	303	215	88	19850	4.4
1957	342	190	144	20110	7.2
1958	349	246	103	20370	5.1
1959	356	208	148	20720	7.1
1960	434	193	241	21580	11.2
1961	436	191	245	22380	10.9
1962	479	232	247	22960	10.8
1963	505	211	294	23450	12.5

The rate of natural increase for England & Wales in 1963 was 6.0

BIRTHS For reasons suggested in the previous report the trend of the birth rate continued upward:

	1956	1957	1958	1959	1960	1961	1962	1963
Births	303	342	349	356	434	436	479	505
Birth rate [*]	14.8	16.5	16.6	16.7	18.9	18.3	19.7	20.0
Adjusted Birth rate	15.6	16.1	16.4	16.5	17.1	17.4	18.0	18.2
Eng.&Wales								

*Adjusted by comparability factor.

DEATHS At 232 the number of deaths in 1962 was high for recent years but was exceeded in 1958 when no doubt the influence of Asian 'flu affected the 1st quarter.

The death rates in recent years have been:

	1956	1957	1958	1959	1960	1961	1962	1963
Deaths Northfleet	215	198	246	208	193	191	232	211
Death rate (adjusted)	12.4	11.4	14.0	11.6	10.9	10.4	12.3	11.4
Death rate Eng. & Wales	11.7	11.5	11.7	11.6	11.5	12.0	11.9	12.2

Two environmental features require consideration, namely the fog of December 1962 and the exceptionally cold weather of January and February 1963.

December 1962 produced 28 deaths compared with 20 in December 1963.

A concise way of surveying the cold winter of 1963 is to view the deaths in the first quarters of recent years:

	1960	1961	1962	1963
Age 0-74	37	35	44	54
Age 75+	22	25	35	33
Total	59	60	79	87

The adverse influence of winter produces generally an increased death rate in the first quarter as will be seen from Table VIII and the death rate for the first quarter 1963 here 18.8 showed an increase on previous years parallel with the increase shown by that of England and Wales (17.0).

MAIN CAUSES OF DEATH Except for increased emphasis on the first quarter there was little change in the pattern of causes of death.

For instance the percentages of deaths from respiratory disease 1960 - 64 were 11% 12% 13% 13%.

As usual in 1963 the chances of dying from cancer were almost 1 in 5 and there was about a 3 in 4 chance that such a death would occur before 75 years of age. The chances of dying from stroke were about 1 in 7 and there was just over an even chance that such a death would occur after age 75. Circulatory disease continued to be responsible for 1 death in 3 and about half such deaths occurred under 75.

The pattern is much the same as that of England & Wales.(Table VII).

PLACE OF DEATH Deaths in hospital give appreciably lower percentage than in neighbouring districts. It seems that the further home is from hospital the more likely is death to take place at home.(Table VIII).

CORONARY DISEASE Nine of the deaths from this cause in 1962-63 occurred at ages less than 55 years. In the last 5 years deaths have been:

		Rate per thousand population		
	Number	England & Wales	Northfleet U.D.	London
	Northfleet U.D.			
1959	29	1.40	1.87	1.89
1960	27	1.25	2.01	2.02
1961	31	1.39	2.07	2.05
1962	36	1.57	2.20	2.26
1963	30	1.28	2.29	2.36

The crude death rate from this cause appears to be consistently lower than the national rate and does not seem to contain the latter's upward trend.

By quarters the figures (local) were:

Persons					Persons				
1962	0-64	65-74	75+	All ages	1963	0-64	65-74	75+	All ages
1st qr.	2	4	5	11	1st qr.	7	3	2	12
2nd qr.	3	3	2	8	2nd qr.	4	-	2	6
3rd qr.	2	1	3	6	3rd qr.	-	-	2	2
4th qr.	3	5	2	10	4th qr.	4	2	5	11

VASCULAR LESIONS OF NERVOUS SYSTEM Deaths from this cause 1958-63 have been 34, 33, 27, 27, 31 and 25.

By quarters the figures (local) were:

1962	Persons	1963	Persons
1st qr.	10	1st qr.	10
2nd qr.	6	2nd qr.	7
3rd qr.	7	3rd qr.	6
4th qr.	8	4th qr.	4

The emphasis on the 1st quarter does not seem to have increased with the severe winter of 1st quarter 1963.

CANCER Deaths from this cause 1959-63 were 44, 45, 41, 38 and 36. In 1963 the Northfleet death rate from this cause was 1.53, the rate for England & Wales was 2.2.

Cancer of the lung In recent years deaths from this cause have been:

	Number	Rates per thousand population		
		Northfleet U.D.	Northfleet U.D.	Eng.& Wales London
1959	14		0.68	0.46 0.64
1960	10		0.46	0.48 0.70
1961	10		0.45	0.49 0.67
1962	8		0.35	0.51 0.68
1963	<u>6</u>		<u>0.26</u>	<u>0.52</u> <u>0.70</u>
1959/63	48		0.43	0.49 0.68

The 1962-63 deaths were males aged 55 years or over. It is tempting to interpret our figures as a downward trend while the nation's figures are rising but the conclusion must be that this picture is a product of the play of chance upon the smallness of our figures. The 95% confidence limits to each of these rates is about 0.2 which means (I think) that among 95% of samples each the size of our population one with a rate of 0.26 could be produced from a national population with a rate of 0.46. It seems thus that our figures may be in keeping with the national picture.

Cancer of the uterus In the years 1958-63 deaths from this cause have been 4, 0, 0, 3, 3 and 1. Total 11 deaths in 6 years. The ages of the 1962-63 deaths were 33, 50, 54 and 59 years. The figures measure the saving of years of life that could be effected by the services being planned for the early detection of cancer of the uterus. This saving appears to be small

Leukaemia In the years 1958-63 deaths have been 1, 0, 3, 1, 2 and 3. This seems in harmony with a 1963 England & Wales death rate of 0.06 per 1,000 and the mild, barely perceptible, increase of recent years.

RESPIRATORY DISEASE The deaths from this cause 1958-63 were 27, 32, 22, 22, 30 and 27. December 1962, the month of the fog, produced 6 deaths. The first quart of 1963, which included the exceptional winter, produced 20 deaths compared with 8 in the first quarter of 1962 (Table VII). In the first quarter deaths were:

	1st qr. 1962	1st qr. 1963
0-74	3	12
75+	5	8

The winter of 1963 seems perhaps to have had a discernable effect.

MATERNAL DEATHS ETC. There was a death from toxæmia of pregnancy at age 19 years in 1962. Death rates for infants before and after birth were not out of harmony with the rates for England and Wales.

INFANT DEATHS	Age	Cause	Number
1962 Total 12			
Less than 1 day	(3) -	Atectasis	2
		Prematurity	1
1 to 6 days	(3) -	Prematurity	1
		Pneumonia	1
		Inhalation liq. amnii	1
7 to 27 days	(1) -	Bronchitis	1
28 to 364 days	(5) -	Pneumonia	1
		Gastroenteritis	1
		Congenital malformation	2
		Medulloblastoma	1
1963 Total 14			
Less than 1 day	(4) -	Asphyxia	2
		Prematurity	1
		Congenital malformations	1
1 to 6 days	(4) -	Prematurity	2
		Pneumonia	1
		Tentorial tear	1
7 to 27 days	(2) -	Congenital heart disease	2
28 to 364 days	(4) -	Pneumonia	2
		Bronchiolitis	1
		Epilepsy	1

All the 1962 deaths occurred in hospital. The home of the death from gastroenteritis was satisfactory.

The 1963 deaths occurred in hospital except for the two deaths each at two weeks from congenital heart disease, the death at 5 months from bronchitis and that at 10 months from epilepsy. The death from bronchiolitis had had to have a tracheotomy for pneumonia three months previously. One death at 4 months from pneumonia was sudden and from a handicapped home. The infant who died from epilepsy had had a difficult birth.

STILL- BIRTHS	I.C.D.No.	Sex	Weeks	Weight In hospital	Cause
1963	Y32.2	M	39	7 lbs 4 oz	Accidental haemorrhage
	Y32.2	M	30	4 lbs 5 oz	Antepartum haemorrhage
	Y32.4	F	38	4 lbs 3 oz	Toxaemia of pregnancy
	Y34.6	M	40	7 lbs 15 oz	Rupture of uterus
	Y36.0	F	43	6 lbs 6 oz	Cord round neck
	Y36.6	F	40	3 lbs 13 oz	Placental insufficiency
	Y37.8	M	40	7 lbs 4 $\frac{1}{2}$ oz	Tentorial tears
	Y38.0	M	28	1 lb 12 oz	Anencephalus
	Y39.5	M	42	7 lbs 12 oz	Intrauterine asphyxia
				At home	
	Y36.0	F	-	-	Cord round neck
	Y38.1	F	-	-	Hydrocephalus
	Y38.0	F	-	-	Anencephaly

Details of one stillborn not received owing to arrangements starting mid-year.

ERRORS OF CONDUCT OR MANAGEMENT

ACCIDENTS The environmental hazards emerging to-day are physical and man-made. Yet our environmental health service has largely evolved from measures used in the control of germ-borne disease.

In this latter hazard Nature has helped us and shared our responsibility by providing individuals and populations with immunity devices which have encouraged unsusceptible populations to evolve. Nature has been on our side, indeed she might have done better without us.

But for physical hazards no benevolent influence from Nature lies in the background. In accidents it is Chance that plays the equivalent role. Chance can be against us as often as with us and has no loyalties. It has no interest in our happiness or survival.

We can measure the attention paid to Chance by fear or courage, foresight or folly, self-interest or service. But Chance is calculating in a computer-like way and measures the attention it receives by survival injury or death. Chance is callous and should be kept under alert, fatigue-free, intelligent observation.

Risks will always be taken and prudence and communal service may even demand that they be taken. Our objective should be to ensure that risks are reduced to a minimum and that the inevitable accidents that happen are the products of risks that have been studied and accepted with precision and justification.

The large administrative units, the Transport Boards and Companies, the Factories and Mines can devote attention and pay respect to the risks in which they are involved. It is in circumstances where the single individual is dominant and where he is immature, infirm, or weary that Chance gets loose to cause tragedy.

ROAD Deaths of Northfleet residents 1962/3 not necessarily on local
ACCIDENTS roads have been:

	Age Years	Sex	Type	Place of Accident
Motor Vehicle Accidents				
1962				
	20	M	Pedestrian/Motor car	Not known
	62	F	Pedestrian/Motor car	Junction of Watling Street/Downs Road
	72	M	Pedestrian/Motor cycle	Not known
	82	F	Pedestrian/Motor car	Not known
1963	39	M	Motor cars collided	Betsham Road, Southfleet
	81	F	Motor cars collided	Not known
Other Road Accidents				
1962	79	M	Pedestrian/Pedal cycle	Not known
1963			None	

ROAD
ACCIDENTS
(continued)

Deaths from motor vehicle accidents 1958-63 have been 2, 1, 2, 3, 4, 2 which gives a death rate per 100,000 of 10.7 over the six years. The 1963 rate for England and Wales was 13.5.

In Northfleet in the six years the 14 deaths from motor vehicle accidents represent 1.1% of all deaths.

In England and Wales the 1963 percentage was 1.1.

This and neighbouring districts contain busy roads with fast moving traffic. The casualties on these roads include many residents of districts elsewhere and while these are a matter for our concern they do not enter into our death rate from this cause.

The following are taken from the Chief Constable's reports:

Local Authority	Total injury accidents	Killed	Casualties		Total
			Seriously injured	Slightly injured	
Dartford R.D.					
1961	416	13	156	431	600
1962	336	16	134	342	492
1963	322	9	135	309	453
Dartford M.B.					
1961	315	13	87	300	400
1962	267	5	85	241	329
1963	317	4	112	273	389
Northfleet U.D.					
1961	121	3	33	111	147
1962	108	3	31	100	134
1963	115	1	28	122	151
Swanscombe U.D.					
1961	57	1	36	41	78
1962	44	1	16	45	62
1963	63	1	24	57	82

ACCIDENTS
IN THE
HOME

Up to the end of 1963 this Council had not made use of the permission it had received in the 1961 Act to promote safety in the home and for administrative reasons I have made no request to the hospitals for the details regarding admissions to hospitals from accidents in the home. I thus have no information on the casualties from this cause other than the deaths. These were:

	Sex	Age	Accident
1962	F	85	Fall
1963	F	5	Burns
	F	49	Fall
	F	57	Fall (epileptic)
	F	61	Sedative poisoning
	M	77	Fall
	F	80	Coal gas poisoning

The young child's death from burns was due to the child's clothes being set alight from the open fire.

The 1962 death from a fall was a result of tripping on a rug. Apart from the fall associated with an epileptic episode the two other 1963 deaths from falls were on a door-step and on stairs respectively with other ill health as a contributory cause.

The coal gas poisoning was a widow living alone and forgetful in managing the gas taps.

SUICIDES

There were 2 deaths from this cause by coal gas poisoning in 1962 and none in 1963. In the ten years 1954-63 suicides have been:

	Av.Pop.	Number	Period	Rate/100,000/year
Dartford Town	42,000	56	1954-63	13.3
Northfleet U.D.	21,000	23	1954-63	11.0
Dartford R.D.	48,000	31	1954-63	6.4
Eng. & Wales	47023,000	5715	1963	12.1

INFECTIOUS DISEASES

GENERAL

The question may arise as to why we take up so much space attempting to obtain a measure of the number of vaccinations which certain age groups have received during the course of recent years. The reason for this is that the progress of an outbreak of infectious disease depends on the proportion of susceptible individuals in the community. The disease seems to need a certain proportion of susceptible persons in order to obtain sufficient momentum to effectively spread. The fact that measles appears in large numbers on alternate years is probably due to the need for a two year collection of susceptible school entrants to get the disease established.

For diphtheria 75% of immune children has been the target for vaccination on the grounds that this measure of immunity is estimated as sufficient to prevent a substantial spread of the disease. When the disease has broken out, as it still does from time to time, it does seem as if this barrier is effective.

In normal times the percentages of people vaccinated against the various diseases will excite but little interest but when poliomyelitis, diphtheria or uncontrolled smallpox is a threat these figures will be regarded with concern or satisfaction according to their size.

To be brief, absolute numbers of vaccinations only provide partial information of our defences.. Before the defences can be effectively measured these absolute figures need to be turned into percentages of the relevant population.

Virus Infections

MEASLES

The biennial cycle meant that we expected this disease to appear at the end of 1962 and then increase in prevalence so as to dominate the first quarter of 1963. However the disease appeared a couple of months earlier than expected with the result that although the cycle was evident the earlier peak obliterated the alternation of the years. (Table IX)

INFLUENZA

Influenza due to mild Virus B occurred in England and Wales in the first quarter of 1962 and judging by the sickness benefit figures it appeared here in January. In 1963, early February, Virus A2 appeared in southern England while we were experiencing an exceptionally cold winter. In harmony with this the sickness benefit figures here show a peak at the end of that month.

POLIOMYELITIS

No case of poliomyelitis occurred in 1962 or 1963. The last case here was in 1957. In England and Wales the number of cases notified in 1963 was the lowest in post-war years.

In 1962 a vaccine made from a live virus given by mouth was introduced throughout the country. This replaced the vaccine made from inactivated virus given by injection unless the latter was particularly requested. This new vaccine of attenuated virus is able to infect the intestine and by establishing itself there is able to prevent a further infection by the wild harmful viruses. It will be seen from Table XII that by the end of 1963 a substantial proportion of the young population had had three doses of poliomyelitis vaccine within the last five years and that a substantial proportion of school children had had four doses of vaccine.

SMALLPOX

(i.e. air passenger)
Smallpox was introduced by air/into this country in December 1961 and January 1962 and there followed 62 indigenous cases in England and Wales with 24 deaths.

A Pakistani with smallpox was admitted to Long Reach Hospital on December 28th 1961. He died on January 7th 1962. A person working in Dartford but living in Woolwich was admitted with smallpox on January 24th. A person from Hornchurch working by the Thames opposite Dartford was admitted with smallpox on January 29th. 4 suspected cases of smallpox were isolated in the hospital, of these, three finally were regarded as not smallpox while one may have been smallpox without a rash.

A large demand for vaccination occurred amongst the public and records (Table XII) showed a marked increase on previous years.

Vaccination policy is based not only on the risks of smallpox but on the assessment of the risks of vaccination and revaccination at different ages. For certain adults vaccination records have not been required in the past and for assessment of risk more complete records have seemed desirable. However after 1962 owing to the burden on public funds, more apparent than real, caused by payment for records of vaccination in the 1962 outbreak, the age groups for which records would be required in the future were limited still further. This re-arrangement we opposed but our opposition was unsuccessful. Records for 1963 are thus even less complete than for previous years and this curtailment will continue into the future.

Vaccination against smallpox consists of the insertion of living virus into the skin to cause a mild disease which in certain limited circumstances can be contagious. In a few rare persons with rare characteristics it can cause serious illhealth and even death. Public demand for vaccination in 1962 in England and Wales was responsible for almost 10 million vaccinations and these vaccinations caused over 100 severe illnesses and 16 deaths. Hence it is that

rushed vaccinations done indiscriminately by the thousand as a result of demand rather than need and without opportunity to detect contraindications are deplored. "Mass vaccination" as the phenomenon is called is almost an obscene term in public health circles and in essence it implies that either the disease is out of control or the public are not being wisely influenced.

The opening of a public clinic for vaccination most unfortunately may be interpreted by the public as a sign of urgency, it may initiate excessive demand and may lead to "mass vaccination". Another response is however possible. The opening of a clinic could be interpreted as a reassuring sign that ample lymph and facilities are available for use according to advice being given.

This second response is made improbable by the nature of our propaganda. The only public persuasion that exists on this subject gives unqualified support to the practice of vaccination and the public are naturally impatient with talk of risks of vaccination, on the one occasion when to them the need according to previous propaganda has become apparent. A better belief would be that there is a minute risk associated with adult primary vaccination, a smaller risk with adult revaccination and that even when smallpox is not under complete control the risk to the individual member of the general public of getting the disease is minute.

The following might in future avoid needless public anxiety and needless public demand:

- (1) public vaccination facilities available if necessary to meet public demand:
- (2) persons with contra-indications to be vaccinated only, if at all, by their family doctor,
- (3) emphasis on the need to follow authoritative advice in making use of such facilities,
- (4) advice deliberately over simplified into a colour code, e.g.

Risks of smallpox.

Green: less than risks of vaccination or revaccination.

Blue: greater than risks of revaccination.

Yellow: greater than risks of adult primary vaccination.

Brown: substantially greater than risks of adult primary vaccination.

Red: vaccination necessary as public-health measure.

In Northfleet at the end of January a blue intimation might have been worth consideration in the light of information then available.

Bacterial Infections

RESPIRATORY TUBERCULOSIS

The 19 cases notified in the two years 1962 and 1963 give a rate of 41 per 100,000 compared with a 1962 rate of 38 for England and Wales. The number of cases on the register is now perceptibly falling.

It will be seen from Table X that with the cases removed from the register by death the causes were assigned to bronchitis rather than tuberculosis.

In one death tuberculosis was only found after post mortem.

Mass X-ray

The Mass X-ray service visited this area, which includes neighbouring districts, in 1962 and 1963 and Table X shows that the rate of tuberculosis found was appreciably less than the 1962 rate for England and Wales of 1.4 per thousand.

Lung Cancer

In industry the over 45 service found 3 lung cancers in the X-rays of about 6000 males and the routine service for all adults 2 in about 1400.

NON- RESPIRATORY TUBERCULOSIS

The one death from this was an immigrant not on our register.

PNEUMONIA

The pneumonias were notified in 1962: January(1), September(1), December(1), in 1963: January(2), March(3), April(1) May(1), November(1), December(1). I mention this to show that they were not a feature of the severe winter. But pneumonia is not well notified.

DYSENTERY

The one infection was due to Sh. sonnei and was part of a school outbreak in June 1963. A family sampled in November 1963 revealed no organism.

FOOD POISONING

The one case of 1962 revealed no causative organism on sampling.

WATER

S. Typhi murium carrier

Routine examination by the Board revealed that one of their employees in this district was a carrier of S. typhi murium. Arrangements were made with his doctor for treatment. One negative stool sample was obtained from the patient and each member of his household by the Council's Public Health Inspector but before a series could be obtained the person left the Board's employment.

Northfleet Pumping Station

The samples of 1963 of raw water from Northfleet pumping station which showed E. coli type 1 were taken by the Board in November and were associated with a period of heavy rainfall. They suggest the possibility of sources of pollution in this district or its vicinity which we must keep in mind.

ATMOSPHERIC POLLUTION

Thames-side

In terms of atmospheric pollution this Urban District is small in size and it is expedient to observe it as part of a larger area which includes the districts of its neighbours. The area thus contemplated forms a substantial part of the linear extension of the conurbation of London towards the east along the south bank of the Thames. The river and drained marshes provide expansive open space along the northern edge while open country extends from the boundary in the south. Inside this strip of development are many acres of chalk pits unoccupied by any premises capable of causing pollution. The areas of domestic housing are of moderate size and density. The industries capable of causing pollution are mainly near the river in large conspicuous units the most prominent being cement works, generating stations and paper mills. The cement works present a special type of problem so that pollution is being considered in two parts:

(a) general pollution.

(b) dust from cement works.

(a) GENERAL POLLUTION

Day-to-day
pollution

One is tempted to surmise that the larger a conurbation the more concentrated will be the air pollution inside it. This is so but to a less degree than one might imagine. As one proceeds inwards from the periphery of a conurbation the pollution increases for about a quarter of a mile and then the level becomes constant only to decline when one comes to a park or a smoke control area, rising again after leaving such an area. The reason for this is that pollution is dispersed upwards by convection and turbulence and thus the emissions on which its concentration depends are largely in the immediate vicinity.

This is the pattern of domestic pollution in normal times. To us it means that although the Thames-side urban development is narrow with open country to the north and south, smoke control areas here should nevertheless provide a useful lessening of pollution.

In regard to industry the high chimneys normally give good dispersal to their flue gases while efficient combustion reduces suspended solids to amounts which are small in comparison with those produced by domestic premises. Except where raw materials unavoidably escape large industrial units no longer present a smoke problem.

Fogs

In times of fog the behaviour of pollution is different. Upward dispersion of domestic pollution cannot occur and sideways spread is a consequence. Inside a conurbation this means that each district is affected by its neighbours. In Thames-side however we reap advantage from the open areas on our borders and the pollution we incur is mainly that which we ourselves create. We gain full advantage of our own smoke control.

In regard to industry the tallest of our chimneys will penetrate the top of most fogs and their effluent gases will thereby escape and we reap some advantage from the disposition of our industries in large units.

Measurements The nature of pollution in the urban air is complex and while an association of pollution with ill-health is known the precise constituents responsible and the way by which they assault our health is not yet understood. However certain constituents of air pollution can be measured and these are used as indicators of the amount and trend of pollution. Large numbers of measurements have been made in recent years and are continuing to be made. Measurements alone will not abate pollution and without thought and study they will be wasteful of effort. A team of highly qualified and experienced specialists is guiding this work on a national and international scale but this does not absolve us from studying our own district to apply the knowledge available and to ensure that local knowledge and local expenditure is put to its best use. The figures in Appendix VI provide the material for a limited exercise in this study naïve though it may be.

Indicators
in use The indicators used as crude measurements of pollution are:-
Air stain - the concentration of smoke calculated from the darkness of paper that has filtered air daily (micrograms per cubic metre).
Air acidity - mainly SO_2 which bubbled through H_2O_2 records the acid content daily (micrograms per cubic metre).

Precautions Because particulate matter may pile up in depth air stain calculations have recently been revised. For reasons of expediency the revised smoke calculations are used in Appendix VI only where mentioned. This only affects high concentrations.
The shade of our stains may be affected by the light-coloured dust from cement works yet they are read as if they were made by a standard smoke.

Shade readings were by naked eye before about 1961. Subsequently they were by reflectometer.

Local circumstances peculiar to each gauge affect its readings, e.g., its height, its proximity to emission and the nature of its surroundings. These should be given consideration when comparing the readings of one gauge with another.

The absolute amount of pollutants is dependent on weather conditions as well as emissions. A substantial amount of SO_2 is from industry, emission/^{from} which is independent of season. Thus the smoke/ SO_2 ratio should rise and fall with domestic pollution and as a guide to this emission be more independent of the weather than absolute quantities. I think a mathematician would be as interested in the ratio of smoke to sulphur dioxide as in the absolute quantities of those indicators.

Indicator
discarded Hitherto an inexpensive means of measuring SO_2 has been the lead dioxide candle but although this gauge primarily measures the SO_2 in the air by sulphate formed, its readings are somewhat influenced by temperature, humidity, air movement and matter other than SO_2 . These features are regarded by chemists as conveying inaccuracy and the use of this type of gauge has now been discarded. However the blend of circumstances which have been mentioned as sources of chemical inaccuracy might in a biological

sense be regarded as useful for measurement as such a blend is also likely to influence the effect of pollutants on the human respiratory tract. The gauge was in use to the end of March 1963 and some readings are recorded in our tables.

Thames-side
pollution
1958/63

For the purpose of getting our own pollution into perspective our readings for certain winter days and months and for six-monthly periods for years 1958-63 are presented in Appendix VI. Although the comparison with districts unfamiliar to us is a crude exercise the readings of Islington in inner London and Redmires in open country 5 miles west of Sheffield City centre are included for reference.

In all gauges there is a seasonal swing, the winter averages being appreciably greater than those of summer, as one would expect. This is also shown by the smoke/SO₂ ratio showing that a contributory cause is an increase of domestic fuel combustion.

In winter Thames-side average pollution is about half that in Islington and about twice that at Redmires. In summer the differences are appreciably lessened. It is unlikely that smoke control will get our pollution down to a level less than that of Redmires, so it might be mentioned that the stain there on which measurement is based may receive a contribution from windblown soil dust and thus partially represents a harmless "smoke".

Up to the severe winter of 1963 when pollution levels rose, the trend since 1958 in Islington was downwards but it is not feasible to discern a trend in the Thames-side gauges.* None of the gauges is in a smoke control area and so the trend in Islington may be a result of spontaneous change of practice in the type of fuels used. In regard to the increased pollution of winter 1963 it will be remembered that smokeless fuels were in short supply and any domestic fuel obtainable was burnt.

In a normal winter the Thames-side highest daily concentrations do not seem very different to those of Islington.

Thames-side
pollution
and
bronchitis

The week by week measurements of smoke and acidity have been plotted on graphs together with Thames-side deaths from bronchitis. Both pollution and deaths rise in winter and fall in summer and there may (or may not), be an association between pollution and deaths. For the saving of space these graphs are not reproduced in this report.

London

Having gained an idea of past measurements we can consider the features of 1962 and 1963.

London with its large population and abundant pollution has provided meaningful statistical studies on the effects of urban fog and a useful way of discussing our own limited fog and winter records is to see how they fit into the more comprehensive information of London as a whole.

By its dense population London has an additional gauge, namely the death register. "The level of pollution (in London) begins to exert

*Except for the Smoke/SO₂ ratio the trend being downwards.

a marked effect upon mortality when the daily concentration reaches 2000 micrograms of black suspended matter and 1150 micrograms of acidic gases per cubic metre of air..." (Scott Med. Off. 16.10.59).

London
fog 1962

From December 3rd - 7th 1962 fog extended to a height of 300-400 feet and it was exceptionally cold the minimum temperature being -6°C (21°F). The fog pollution map of London was like a target with the centre north of the river providing a black bull's eye of over 4000 micrograms per cubic metre smoke and SO_2 and the periphery of greater London providing an outer ring of 1000-2000.

In Greater London increase in sickness was shown by a 50% rise in the weekly figures for sickness benefit claims and by acceleration of 700 deaths.

The above was the worst fog in London since that of 1952. However the latter lasted one day longer, smoke rose to over 7000 and SO_2 to 4000. In Greater London there were 4000 accelerated deaths.

It is tempting but premature to attribute the reduction in mortality in the 1962 fog to reduced smoke pollution.

Thames-side
fog 1962

The readings of the Councils' Public Health Inspectors which give maxima of between 1000 and 2000 micrograms per cubic metre fit into the 1962 fog pollution map of London, the peripheral figures of which are in this range, (appendix VI). The absolute amounts show the fog to be at its worst before the morning of the 5th. Up to this time the smoke/ SO_2 ratio at Northfleet had risen but then the ratio fell and I surmise that this was because our tallest industrial chimneys were then being capped by the fog.

New claims for sickness benefit were as follows (Sevenoaks being suburban is given for comparison):

Week ending	Dartford	Gravesend	Sevenoaks	Greater London
December 4	303	240	99	?
December 11	377	333	105	?
December 18	230	246	104	?
% increase	25%	37%	6%	50%

The Thames-side percentage increase in claims is to the Greater London increase in claims perhaps as the Thames-side increase in pollution is to the London increase in pollution.

The accelerated deaths in London amounted to about 1 in 10,000 population. In Northfleet such a rate would produce only 2 or 3 such deaths which would be hardly discernible. The monthly deaths are given in Table VI.

To summarise: the effect of the fog of 1962 in Thames-side was similar to that in London, any difference being mainly one of degree.

Winter
1962/63

The winter 1962/63 was exceptional. After the fog described above there was on December 22 a marked fall in temperature and a period of exceptionally cold weather ensued and lasted until March 4. At Kew Observatory it was the coldest January since 1838 and in St. James Park London the mean January temperature of -0.8°C was 5.4°C below normal for the month. (C.M.O's Report for 1963).

London
January
1963

In London the daily mortality figures began to rise on December 26 and continued to rise to a maximum on January 23rd-28th. Superimposed on the mortality curve are a number of small peaks many of which correspond to days of high atmospheric pollution. One period of heavy atmospheric pollution was January 23rd-28th when the mean daily figures from seven London sites rose to 820 micrograms per cubic metre smoke and 1230 micrograms per cubic metre SO_2 .

Thames-side
January
1963

The pollution figures for certain Thames-side sites are given in Appendix VI. The maximum smoke was at Northfleet with 691 micrograms per cubic metre. At Northfleet perhaps we had more deaths than usual for January but the increase was small.

TOWARDS CLEAN AIR.

The
Movement

Those only concerned with the local affairs of clean air may not be aware of the expanse of the communal effort in which they have a part. In clean air widespread local need at the periphery has promoted the creation of national resources at the centre which have been a stimulus to local demand. The result is an expanding movement in which local and national endeavours are mutually complementary and which contain a wholesome blend of public, academic and enlightened self-interest. Some clumsy features there are but as a whole the movement is elegant and engaging.

Legislation and co-operation is reducing domestic and industrial carbonaceous smoke to a minimum and is ensuring that the best practicable means are used to limit the escape of dust and grit. In addition domestic choice or expediency is increasing the use of solid or "piped" smokeless fuels. Residential areas are clearing while certain industrial units are dispersing their emissions from chimneys that are both tall and stately; the cottage is entering into partnership with the generating station. The smoke content of London air is half what it was ten years ago.

The overall expenditure on clean air is now substantial and yet we are only half way through the easier task of removing suspended blackness. The increasing emissions of invisible gases present the harder problem and for these such success as can be recorded is that their ground level concentration has been kept from increasing.

As is essential now more than ever, the measures that are being initiated are infused with an abundance of thought. Investigations and studies have been and are being provided by national bodies which include government research departments, the former L.C.C., certain universities and certain industries. The bodies which make use of their refined findings include industry, local authorities, executive departments of ministries and the World Health Organisation. Conversely the research bodies base a lot of their work on the endeavours of the executive workers at the periphery. Those concerned number thousands and include

statisticians, administrators, chemists, physicists, engineers, physicians and meteorologists.

Relation
to
Health

The action of for example carbon monoxide is understood but this acts on the blood tissue and is only rarely in a significant concentration. On the human lung tissue it is not known precisely how the constituents of polluted urban air assert their adverse effect. Pollution aggravates long standing chest disease and can be the final stress. But as a cause of chest disease pollution is but one of several likely factors. Smoke control is strived for because we have technical ability to achieve it and because conjecture suggests that carbon is a carrier of injurious agents. If improved health is the incentive for clean air the proportion of resources devoted to studying the biology of air pollution seems disproportionately small. A luxury liner with services devoted liberally to everything but navigation may get off course.

Past
Incentive

The clarity of the association of smoke from tobacco with cancer and bronchitis is outstanding yet substantial private expenditure is incurred not on its abatement but on its production. It follows that the incentive for clean air cannot have come from the post-mortem room or from the cancerous or bronchitic lung. Pathologists are reticent and number only a few hundred. More likely the incentive for clean air has arisen from the clothes line and the blemished washing. Housewives are vocal and number numerous millions. Improved amenity rather than improved health has probably been the prime motive in past progress.

The
future
task

Many of the agents in air pollution suspected of being injurious will remain after smoke-free air has been achieved. How these pollutants will behave in the absence of carbon and how necessary it will be to disperse or prevent them remains to be seen. If they are to be removed, as presumably they should, then the task to provide air which is wholesome will be more difficult to achieve than our present task to provide air which is clean.

Inter-
national
co-operation

Progress in this country since the war has been accompanied by similar endeavours on the continent where post-war industrial expansion has created similar problems. Interest in clean air has spread throughout the world and international co-operation, research and standardisation of units of measurement is now provided for by the World Health Organisation.

*Footnote to previous page. Examples of clumsy features have been: imbalance between the large effort for the gathering of measurements and the small effort for their interpretation; the co-ordination work required by a partnership between local democracy and central technocracy; the evolution of the Thames-side Committee into a pressure group rather than a study group; the attention given by isolated committees to isolated measurements.

DUST FROM CEMENT WORKS

In a memorandum of 1956 to the Joint Committee for the Abatement of Atmospheric Pollution and in my report for 1958-59 to this Council this feature of our environment was subject to a review which included the history of the nuisance, the methods of manufacture of cement, the methods of dust prevention, the nature of the dust and the relation of its pollution of the air to the health of the local population. The review that now follows concerns the further evolution of the position to the end of 1963.

The Cement
Works

In 1959 one of the 4 kilns at Bevans Works, Northfleet was modified to use the semi-dry process and a new electrostatic precipitator was provided for that kiln. This new process and precipitator had "teething troubles" which were soon overcome. In 1960 two other new precipitators for two other kilns at Bevans were put into use there and also a new 350' chimney. In 1961 the new 400' chimney at Swanscombe Works was completed and in the following year the flue system came into operation to connect all normal kilns to that chimney. In 1962 a new precipitator was provided for the Metropolitan Works across the river and six small kilns on only chain arrestment were closed down. At the time of excessive dust nuisance in that year the production from Thames-side was reduced. In 1963 the 4th kiln at Bevans Works was provided with a precipitator, a second new precipitator was provided for the Metropolitan Works and no kiln on Thames-side was allowed to work without an external means of dust arrestment even for brief periods. At Thames-side by the end of that year £2 million had been spent on dust arrestment since 194 and the "overall average" dust slip had come down to 0.4 grains per cu. ft. in the emitted flue gases and the target set was 0.2 grains which is 0.2% of clinker produced.

Trouble
from clay

In 1961 with the exception of Bevans the Thames-side works in Kent had been obtaining estuarine clay from Cliffe marshes, which clay has a high silica and alkali content. As more was extracted the clay deteriorated in quality in this respect and the high alkali content resulted in a greater dust burden on the precipitators with the dust failing to dislodge from the collecting electrodes on rapping. Thus arrestment of dust was seriously impaired. The prospect of trouble became known to those concerned with management and administration and in 1961 steps were taken to obtain eocene clay from Essex, which clay has not the difficult properties of the estuarine clay. Unfortunately before arrangements which included seeking planning permission were completed, weather and precipitator behaviour combined in 1962 to create periods of exceptional dust nuisance on Thames-side with accompanying public indignation. However by the end of 1963 all except the Swanscombe works were on eocene clay and for these works arrangements to obtain this clay subsequently materialised.

In 1963 the districts of the Alkali etc. Works Act Inspectors were reduced in size so that they could give greater time to Thames-side problems.

The reports from the Chief Alkali etc. Works Inspector and information from the Industry are instructive on these matters and on these the above account has largely been based.

Administrative
action

In 1959 an approach was made from the Joint Committee to the Ministry for a public hearing into the nuisance caused by dust from cement works but the Minister was disposed to regard the matter as one of public relations in which the industry should take its part.

In 1960 a deputation from the Joint Committee met their Members of Parliament to discuss the assistance the latter could give towards obtaining information on the efficiency of dust arrestment plant on new processes of manufacture and on the means by which the Inspectorate were able to carry out their duties.

In 1962 a deputation from the Joint Committee waited on the Minister of Housing and Local Government. The deputation expressed disappointment at the lack of improvement in the dust nuisance position and submitted a detailed statement. The Minister emphasised that he regarded the matter as seriously as did the Joint Committee. He placed importance on the obtaining of eocene clay from Essex.

In November 1962 the Member of Parliament for Dartford raised several questions in the House of Commons about the nuisance.

In 1963 a panel of Town Clerks and Clerks of Councils came into being to report on what legal action could be taken in the event of further serious dust deposit.

In 1963 the Member of Parliament pressed the Ministry of Housing and Local Government for the dust/clinker ratio to be supplied for individual works. The dust emitted as a percentage of clinker produced in a given time is used as an index of the ability of a plant to avoid dust nuisance. The Minister however would only agree to make available the annual average figure for Thames-side.

The proceedings of the Joint Committee are informative on these matters and from them greater detail can be obtained.

Deposit
Gauge
Readings

The Graphs in Appendix VI give the trend lines from 1954 up to March 1962 when calculations were suspended for a review by the County Analyst of the method of calculating the percentage of dust from cement works. The half-yearly figure for total deposit remained almost level along the years, the dust from cement works showed a rising trend from 1958 onwards while dust from other sources showed a downward trend from that year. The latter is no doubt due to the change over from coal to oil by industry including the cement industry.

The trend lines of the individual gauges near the cement works showed no spectacular trend changes through being near the works but from 1959 onwards the Northfleet and Swanscombe gauges showed periodic winter increases in dust from other sources. I imagine this is associated with the increased use of fuel in winter by coal-fired generating stations. Northfleet generating station came into use in 1960.

As weather is influential in determining the deposit in the gauges there is perhaps a case for using the percentage of dust from cement works as related to dust from other sources as a guide. Their trend from 1959 onwards is markedly upward but they are not reproduced here as they are probably an unsound guide.

For the year when the dust nuisance was so exceptional in the spring and in October the routine readings (i.e. without estimates of dust from cement works) of deposit gauges near the cement works were:

Deposit Gauge Readings

Tons per Square Mile

1962

Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec

Dartford

Bow Arrow

Total dissolved	18	11	18	23	13	13	15	11	7	27	16	16
Total undissolved	15	11	19	34	18	29	22	14	5	44	5	8
Total solids	33	21	38	57	31	42	37	24	12	71	21	24

Dartford

Horns Cross

Total dissolved	29	19	36	30	32	16	21	11	14	37	34	39
Total undissolved	49	23	57	70	59	23	38	19	15	53	36	14
Total solids	77	42	93	100	91	39	59	30	30	90	70	53

Swanscombe

Total dissolved	21	19	20	19	23	12	20	14	13	25	Not	Not
Total undissolved	15	31	26	20	33	14	19	12	13	32	avail-	avail
Total solids	36	50	46	39	57	25	39	26	26	57	able	able

Northfleet

Total dissolved	16	17	23	16	14	10	16	11	13	26	19	28
Total undissolved	21	22	25	14	13	20	16	16	16	27	13	24
Total solids	37	39	49	30	27	30	32	27	28	53	32	53

The nature of the dust

The Chief Inspector Alkali etc. Works Act has repeatedly emphasised that in spells of dry windless weather even with the improvements of recent years and those yet to come some dust nuisance will be inevitable at Thames-side. It is prudent therefore to study the nature of the dust and search for clues to the future significance of this nuisance.

The dust consists mainly of the raw materials of cement namely chalk and clay. It also has a small proportion of lime and gypsum created by the furnace with some coal ash if the kilns are coal fired. The larger dust particles can agglomerate to fall as blobs. If they behave like particles of other dusts the larger particles will be brought down by rain as well as gravity and rain will thus leave the finer particles suspended. The specific gravity is 2.6. The particle distribution of the dust can be assumed to be something like that implied in the following table:

Particle size in 1/100th mm. diameter

	60 μ	30 μ	20 μ	10 μ	5 μ	2 μ
Free falling speed (cms per sec)						
(a) refined formulae for S.G. = 1	about 10	about 3	about 1	0.3	about 0.08	0.01
(b) $d^2/200$	18	4.5	2	0.5	0.13	0.02
Minutes to fall 200 metres by (a)	33	111	333	1110	4167	33333
by (b)	19	75	167	667	2564	16666
% by weight this particle size or over	5%	20%	40%	50%	70%	80%
under this particle size	95%	80%	60%	50%	30%	20%
Longest mileage theoretically by(a)	1	4	11	37	139	1111
travelled to reach ground in 2 m.p.h. wind by(b)	0.6	2.5	5.6	22	85	556

Future
nuisance
by
deposit

In future the emission of dust from any cement works at Thames-side will be no more than 0.2% of cement clinker produced by the kilns. As $4\frac{1}{2}$ million tons of cement are produced annually this means that 9000 tons of dust a year will be emitted from the Thames-side chimneys i.e. 750 tons per month. If 40% of this is deposited owing to windless weather in the cement producing district which covers about 18 sq. miles the result will be a rate of deposit, as measured by gauges, of about 12 tons per sq. mile in three weeks which is the longest such weather is likely to last. Thus the figure for an exceptional month of dry calm weather is likely to be around 15 tons per sq. mile. In the past the deposits of dust from cement works for such exceptional months in the cement production area have averaged around 40 tons per sq. mile.

Suspended
dust

With improved efficiency of dust arrestors the larger particles will represent a smaller portion and the finer particles a greater portion of the dust emission than they have in the past. These small particles are air-suspended and have little influence on deposit gauge measurements. Certain features of the Thames-side area suggest that this suspended dust is present in significant amounts. These are:

(a) Haze. With light air movement in calm weather a somewhat opaque haze cloud can be seen emanating from each cement works chimney and separating from the steam plume. Where it reaches the ground it envelops numerous acres in its environment the haze particles presumably remaining suspended. This with the obscuration suggest that the cloud is composed of particles at the small end of the size distribution.

(b) Impingement. In calm dry weather when nuisance from the dust is exceptionally severe the readings of the deposit gauges while reflecting the nuisance do not provide readings which are as exceptional as the

nuisance. The presumption is that a substantial part of the nuisance is caused by dust of small particle size travelling horizontally and impinging on vertical surfaces.

(c) Smoke stain. In the calibration of smoke stains carried out by D.S.I.R. the amounts of smoke material on filter paper to provide dark stains was assessed for Sheffield, Glasgow, Islington and Greenhithe. Greenhithe smoke required twice the amount on the filter paper that Glasgow smoke required to produce a stain of the same darkness. This does not necessarily mean that our smoke stains are inaccurate but it does show that the quantity of dust from cement works suspended in the air is of similar amount and particle size to that of the carbonaceous smoke being measured.

(d) First calculation. The occasion when this dust is most significant is when there is fog and this is a situation which makes a simple calculation meaningful.

A bad fog lasts about five days. 750 tons of dust are emitted in month (see above) = 125 tons in 5 days. 20% of this dust is suspended in air = 25 tons = 25×10^3 kilograms = 25×10^6 grams = 25×10^{12} μg .

The cement works area measures about 50 sq. kilometres. The fog is 0.2 kilometres high and so the box of air into which the dust is emitted is 50×0.2 cubic kilometres i.e. 10 cubic kilometres = 10×10^9 cubic metres = 10^{10} cubic metres.

Thus the concentration at the end of a five day fog is

$$\frac{25 \times 10^{12}}{10^{10}} = 2500 \text{ } \mu\text{g per cubic metre air.}$$

This is of the same order as the concentration of smoke and SO_2 and thus if the suspended dust has a capacity for good or ill it appears that the concentration should be adequate for it to assert its effect. It seems that in the cement districts there is about one microgram of suspended dust from cement works for every microgram of carbonaceous smoke or SO_2 .

(e) Second calculation. What is the weight of 1000 particles of dust from cement works of "average size 2μ "?

Consider the particles cubical in form, then in 1 cubic centimetre there would be

$$(5000)^3 = 125 \times 10^9 \text{ particles.}$$

Now as the specific gravity is 2.6 one cubic centimetre weighs 2.6 grams. For convenience call it 2.5 grams. Thus:

$$125 \times 10^9 \text{ particles weigh } 2.5 \text{ grams} = 2.5 \times 10^6 \text{ } \mu\text{g.}$$

$$\therefore 1000 \text{ particles weigh } \frac{2.5 \times 10^6}{125.0 \times 10^6} \text{ } \mu\text{g.}$$

$$= \frac{25}{1250} \text{ } \mu\text{g.} = .02 \text{ } \mu\text{g.}$$

In Italy counts of suspended dust particles in the vicinity of a cement works emitting 100 tons of dust per month were:

		per litre	per m ³
0.8 kilometres upwind of the works		17000	= 17 x 10 ⁶
0.1 " downwind " " "		500000	= 500 x 10 ⁶
2.0 " " " " "		75000	= 75 x 10 ⁶

Thus weight of suspended dust per m³ of particle "size 2 μ " is as follows:

0.8 kilometres upwind	=	17 x 10 ³ x .02	=	340 μ g.
0.1 " downwind	=	500 x 10 ³ x .02	=	10000 μ g.
2.0 " " "	=	75 x 10 ³ x .02	=	1500 μ g.

The abstract from which these particle readings were taken states "the majority of particles were less than 2 μ ". Nevertheless even without a precise statement on particle size it seems justifiable to conclude that in the vicinity of cement works the concentration of suspended dust from those works is of the same order by weight as is particulate matter from fuel combustion in town air. This is in harmony with the previous calculation.

Health

The effect of this dust on the health of the local community was discussed so far as was practicable in the last review. There is the following to add.

In 1962 towards the end of the period 4th-24th October, (i.e. the three weeks of exceptional nuisance - the October revolution - 20,000 post-cards for the Minister) enquiries were sent to local doctors asking if there were an increase or otherwise in nose and throat complaints. 45 replies were received. Of these 23 thought there was no such increase, 15 thought there was an increase and 6 thought a controlled survey was necessary before an answer could be provided.

For the years 1959-61 the numbers of deaths from bronchitis occurring each week in each local authority from Bexley to Chatham were obtained from the Registrar General. The population from which these deaths were drawn numbered $\frac{1}{2}$ million. The total deaths for each week were then plotted with the averages for each week of the numerous records of smoke and SO₂ concentrations. For purposes of study it was not instructive to separate the weekly deaths of those occurring in cement producing districts from those occurring in the neighbouring districts because the weekly number of deaths was too small and the deaths were assigned to the district of occurrence.

On the above formed graph the pollution curves ran parallel to the curve of bronchitis with a rise in winter and a fall in summer. This is

the picture obtained generally and so it only served to let us know that in N.W. Kent the bronchitis/pollution relationship was the same as elsewhere. It did not necessarily mean that increased pollution was precipitating the deaths from bronchitis. There was a high peak of pollution in February 1959 followed by a peak in sickness benefit claims and a peak in bronchitis deaths but these events coincided with the prevalence of influenza as well as increased pollution.

It was possible for the years 1957-60 to separate the cement producing districts from neighbouring districts for plotting certain monthly pollution readings and the bronchitis deaths recorded each month. This was because the monthly deaths were assigned to area of residence and were sufficiently numerous to be studied in two groups. For each year there was plotted the monthly readings of acidity of the deposit gauges, the monthly SO₂ readings of the lead dioxide gauges and the monthly bronchitis deaths. As the pollution increased so did the bronchitis deaths for both the cement producing districts and the neighbouring districts. Both pollution and deaths rose in winter and fell in summer.

The lead dioxide gauge readings and acidity readings were consistently less in the cement producing districts than in the neighbouring districts.

These graphs are not included in this report.

Difficulties
of inquiry

The difficulties of delving into this subject with statistical methods are many. The local population is not large enough to make perceptible any changes in mortality that the dust pollution might cause. Newcomers need to be separated from old residents. Age, specific death rates and standardised mortality ratios require assistance from the Registrar General. Sickness records might be enlightening but they are not easy to arrange or interpret. They are time consuming for everyone concerned. Smoking habits would have to be assessed. There may be need to compare our records here with records elsewhere of a population in similar circumstances except for dust nuisance but where such a population exists with same proportions of social classes etc., we do not know.

Nevertheless there are in the area general hospitals, long-stay hospitals, residential institutions and schools all with medical records which together with those of general practitioners might provide raw material from which new facts could be squeezed. The present scale of study is too meagre to make use of this material however.

Organisations
made aware
of our dust

The relationship of this dust to health has been examined so far as is locally practicable and a working conclusion has been reached that dust is inert and has no direct effect on the health of the local population. With this provisional conclusion there has been little incentive for time-consuming research to advance the enquiry on sound technical lines and it has not been feasible to request Local Authorities to support such research financially nor to ask research organisations to undertake such work. So what has been done has been to try to catch

attention of such organisations in the hope that they may have their own incentive for research initiative. Each organisation has shown interest but this has not in any instance gathered sufficient momentum to initiate an erudite enquiry. The following have been made aware of our dusty environment:

The General Register Office. They supplied us with certain standardised mortality ratios of cancer of the lung.

The London School of Hygiene. They gave us useful advice.

The Medical Research Unit of St. Johns Hospital for Diseases of the Skin. With the help of the cement industry this unit had already made a noteworthy revelation in the origin of cement workers' eczema and were already interested in non-occupational eczema from dust in the cement production area. They had found that hexavalent chromium compounds, to which always a few persons are sensitive, were formed in the kilns. Eczema and asthma are related. An extension of their work to a study of the effect of the dust on the local population was prevented by depletion of staff.

The Medical Research Council Air Pollution Research Unit. A physicist interested in the measurement of suspended pale smoke contemplated at our request installing apparatus in Northfleet, the Council agreeing provided the Council incurred no expense. The measurements did not materialise.

The Department of Scientific and Industrial Research. They measured suspended dust at Greenhithe in the process of calibrating smoke stains for the National Survey of Air Pollution.

The Thames-side Joint Committee. In 1957 they agreed to the formation of a committee of technical officers for the purpose of interpreting the statistics and other matters concerning the dust. This technical committee lasted three meetings.

The Minister of Housing and Local Government. He felt that he did not require research to tell him that the dust was a nuisance.

The Public Health Department of Bolton County Borough who were surveying the relation of pollution to the health of their own population. At the time they were approached they had not overcome certain difficulties in their own survey and were thus not in a position to give guidance to us.

The Research Committee of the College of General Practitioners. This organisation is engaged in a survey elsewhere on the relationship of health to general air pollution. The proposal for a similar survey concerned with our dust pollution seemed to lose strength when financial implications appeared.

Impression

If a survey on this subject is to be conducted on sound technical lines using approved statistical methods then it will have to contain a substantial element of local initiative.

Is research
necessary?

The painstaking year-in-year-out analyses of our deposit gauge contents succeed in telling the housewife what she already knows namely the months of exceptional dust nuisance. Our provisional conclusion that the dust is harmless is in harmony with views of families long established in the cement producing area. After seeking evidence to incriminate the dust the late Rev. Stanley Morgan eloquently concluded "the church yards were against us." For practical local purposes we can sense the harmlessness of this dust and meticulous research on its effect on health cannot locally be regarded as a firm necessity. If it rained twice a week we would hear little about this subject.

Is research
desirable?

The concentration of cement works at Thames-side is the biggest in Europe and its proximity to urban development is unusual. Thus we have a situation here which provides an exceptional opportunity for a study of the relationship of this dust to the health of the local community. Enquiries on its relation to health are received here from home and abroad which make it evident that we are assumed to be able to give guidance to others faced with this problem. It is desirable that we should be in a position to give this guidance.

In the cement production area one Council organises rehousing from the vicinity of certain cement works on grounds of amenity while private enterprise uses the area nearby for new residential development. Northfleet Council have a redevelopment programme for residential housing in the immediate neighbourhood of cement works. Thus guidance is desirable for local planning.

On the academic side fanciful possibilities offer scope for intriguing speculation.

General urban air pollution asserts its adverse effect on health through the complex interaction of (1) the carbonaceous tarry mixture called dark smoke with (2) the mixture of acid gases of which SO_2 is the leader. The change in the blend of pollutants which follows the introduction of (3) alkaline dusts of baked clay and chalk might modify the effect of air pollution on health. If research would show this a further clue to the way in which pollution injures health would be made available and such information would have social as well as academic value. Thames-side might have the makings of a respiratory spa.

Bronchitis death rates in England and Wales have been shown to be correlated with the acidity of the rain collected in deposit gauges. The rain collected in our gauges, as has been mentioned, has no acidity and is alkaline. Study of our bronchitis records might be rewarding.

The information before us has always stated that in the arrested dust from our cement works the amount of free silica is negligible. Yet in the samples of deposited dust from the Italian works mentioned above the free silica amounted to 3% to 5%. Sand, which is silica, has been a feature of the estuarine clay which has been used by the works. We do not yet know the precise nature of the suspended dust that is not arrested by the precipitators and is entrained in respired air in the works vicinity.

Trace elements play their part in the injury caused by pollution to health and the mineral matter of our suspended dust must contain such traces. The hexavalent chromium demonstrated in cement could also be dust from the kilns where it has been shown to be created. A few people are sensitive to the metal in this form.

For reasons such as the above research is desirable. It would be time consuming and costly in terms of present local expenditure on air hygiene. A reasonable apportionment of cost would be for a quarter to be borne by the local authorities, a quarter by the central government, a quarter by the cement industry and a quarter by voluntary research organisations.

JHH/CEK.

SOCIAL CONDITIONS

POPULATION. Growth of the population is due to natural increase (i.e. excess of births over deaths) and immigration, both being related to new houses built.

COMPARABILITY FACTORS. When local crude birth and death rates are multiplied by the area comparability factors they are comparable with the rate for England and Wales or with the adjusted rate for any other area. In the last eight years the factors for births (governed by the proportion of women aged 18-44 years) and for deaths (governed by the proportions of all age groups) have been as follows:-

UNEMPLOYMENT

	1959	1960	1961	1962	1963
Males	342	268	309	525	473
Females	145	76	85	134	101
Persons	487	344	394	659	574

	1959	1960	1961	1962	1963
Northfleet U.D.	22	44	32	38	38
Swanscombe U.D.	29	15	37	39	64
Dartford B.	37	35	33	40	46
Dartford R.D.	30	30	22	29	30
Kent A.C.	45	46	49	53	56
England & Wales	51	54	59	66	69

TABLE I (continued)

POPULATION OF YOUNG PERSONS. A guide is necessary to the young population in the district in order that we may form an idea from vaccinations done of the proportion who have been given immunity to certain diseases. A rough estimate can be made from the births which have occurred in the district in the past. This assumes a stable population and does not take into account deaths after one year of age or the balance of those coming into the district over those leaving.

Age		Births		Infants deaths	Approx.	Infants	Approx.
Dec. 31st 1962	1963	Year	Number		Population Age Dec. 1962	Surviving to 1 year	Population Age Dec. 1963
-1	0	1963	505	14	0-4 years = 2,000	491	0-4 years = 2,152
0	1	1962	479	12		463	
1	2	1961	436	9		427	
2	3	1960	434	12		422	
3	4	1959	356	7		349	
4	5	1958	349	10	5-11 years = 2,125	339	5-11 years = 2,170
5	6	1957	342	6		336	
6	7	1956	303	5		298	
7	8	1955	300	7		293	
8	9	1954	315	8		307	
9	10	1953	334	5	5-15 years = 3,391	329	5-15 years = 3,331
10	11	1952	280	12		268	
11	12	1951	305	11	12-15 years = 1,266	294	12-15 years = 1,161
12	13	1950	252	7		245	
13	14	1949	311	9		302	
14	15	1948	334	14	16-18 years = 992	320	16-18 years = 1,062
15	16	1947	427	28		399	
16	17	1946	393	12		381	
17	18	1945	299	17		282	
18	19	1944	336	7		329	
19	20	1943	271	18		253	

Local population estimates also useful in returns:

Born	Age		Population	
	Dec. 1962	Dec. 1963		
1957-62	0 - 5	1 - 6	2336	
1957-63	-	0 - 6	2827	
1943-56	6 -19	7 -20	4300	
1943-62	0 -19	1 -20	6636	
1943-63	-	0 -20	7127	
1949-58	4 -13	5 -14	3011	
1961 Census:	Age	Males	Females	Persons
	15-44	4541	4551	9092
	45-64	2608	-	2608
	45-60	-	2084	2084
	65+	913	-	913
	60+	-	1841	1841
		8062	8476	16538
	0-14	-	-	5554
				22092

TABLE II - BIRTHS & DEATHS, 1962 & 1963.

		1962			1963		
		M	F	Persons	M	F	Persons
Live Births:	Legitimate	221	240	461	246	240	486
	Illegitimate	<u>9</u>	<u>9</u>	<u>18</u>	<u>12</u>	<u>7</u>	<u>19</u>
		<u>230</u>	<u>249</u>	<u>479</u>	<u>258</u>	<u>247</u>	<u>505</u>
Deaths from all causes:		128	104	232	112	99	211
Deaths from pregnancy, childbirth, abortion:		-	1	1	-	-	-
Stillbirths:	Legitimate	3	2	5	7	6	13
	Illegitimate	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
		<u>3</u>	<u>2</u>	<u>5</u>	<u>7</u>	<u>6</u>	<u>13</u>
Infant deaths by age:							
0 to 6 days:	Legitimate	1	5	6	3	5	8
	Illegitimate	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
		<u>1</u>	<u>5</u>	<u>6</u>	<u>3</u>	<u>5</u>	<u>8</u>
7 to 27 days:	Legitimate	1	-	1	-	2	2
	Illegitimate	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
		<u>1</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>2</u>	<u>2</u>
28 to 364 days:	Legitimate	3	2	5	3	1	4
	Illegitimate	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
		<u>3</u>	<u>2</u>	<u>5</u>	<u>3</u>	<u>1</u>	<u>4</u>
Total under 1 year:	Legitimate	5	7	12	6	8	14
	Illegitimate	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
		<u>5</u>	<u>7</u>	<u>12</u>	<u>6</u>	<u>8</u>	<u>14</u>

Rates per 1,000 Home Population

	Northfleet U.D.		England & Wales	
	1962	1963	1962	1963
Crude live birth rate	20.9	21.5	18.0	18.2
Live birth rate adjusted by comparability factor	19.7	20.0	18.0	18.2
Crude death rate	10.1	9.0	11.9	12.2
Death rate adjusted by comparability factor	12.3	11.4	11.9	12.2

Rates per 1,000 Live and Stillbirths

Maternal death rate	2.1	0.	0.35	0.28
Stillbirth rate	10.3	25.1	18.1	17.2
Perinatal death rate (s.bs. & deaths 0-6 days)	22.7	40.5	30.8	29.3

Rates per 1,000 live births

Neonatal death rate (deaths 0-27 days)	14.6	19.8	15.1	14.2
Infant death rate (deaths 0-364 days)	25.1	27.7	21.6	21.1

TABLE IIIA CAUSES OF DEATH ACCORDING TO SEX

Registrar General's Return

	1962			1963		
	M	F	Persons	M	F	Persons
All causes	128	104	232	112	99	211
Tuberculosis, respiratory	1	1	2	-	-	-
Tuberculosis, other	1	-	1	-	1	1
Syphilitic disease	1	-	1	-	1	1
Diphtheria	-	-	-	-	-	-
Whooping cough	-	-	-	-	-	-
Meningococcal infections	-	-	-	-	-	-
Acute poliomyelitis	-	-	-	-	-	-
Measles	-	-	-	-	-	-
Other infective and parasitic diseases	-	-	-	-	-	-
Malignant neoplasm, stomach	2	3	5)	2	2	4)
Malignant neoplasm, lung, bronchus	7	1	8)	6	-	6)
Malignant neoplasm, breast	-	4	4)	-	5	5)
Malignant neoplasm, uterus	-	3	3)	-	1	1)
Other malignant and lymphatic neoplasms	12	5	17)	14	6	20)
Leukaemia, aleukaemia	1	1	2)	2	1	3)
Diabetes	-	2	2	-	3	3
Vascular lesions of nervous system	17	14	31	11	14	25
Coronary disease, angina	22	14	36)	22	8	30)
Hypertension with heart disease	1	1	2)	3	3	6)
Other heart disease	21	22	43)	9	24	33)
Other circulatory disease	2	9	11)	3	1	4)
Influenza	1	-	1)	3	-	3)
Pneumonia	6	4	10)	6	6	12)
Bronchitis	17	5	22)	9	3	12)
Other disease of the respiratory system	-	-	-)	-	-	-)
Ulcer of stomach and duodenum	3	2	5	1	1	2
Gastritis, enteritis and diarrhoea	1	1	2	-	-	-
Nephritis and nephrosis	1	-	1	1	1	2
Hyperplasia of prostate	1	-	1	1	-	1
Pregnancy, childbirth, abortion	-	1	1	-	-	-
Congenital malformations	1	-	1	2	4	6
Other defined and ill-defined diseases	5	7	12	15	9	24
Motor vehicle accidents	2	2	4	1	1	2
All other accidents	1	1	2	1	4	5
Suicide	1	1	2	-	-	-
Homicide and operations of war	-	-	-	-	-	-

TABLE IIIB - CAUSES OF DEATH ACCORDING TO AGE

Registrar General's Return

1963

1963

<u>Persons</u>	All ages	Under 4 wks	4 wks - 11 mos	1 - 4 yrs	5 - 14 yrs	15 - 24 yrs	25 - 34 yrs	35 - 44 yrs	45 - 54 yrs	55 - 64 yrs	65 - 74 yrs	75+	Main causes
All causes	211	10	4	1	3	1	4	3	15	39	47	86	
Tuberculosis, respiratory	1	-	-	-	-	-	-	-	-	-	-	-	
Tuberculosis, other	1	-	-	-	-	-	-	-	-	-	-	1	
Syphilitic disease	1	-	-	-	-	-	-	-	-	-	1	-	
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	
Whooping cough	-	-	-	-	-	-	-	-	-	-	-	-	
Meningococcal infections	-	-	-	-	-	-	-	-	-	-	-	-	
Acute poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	
Measles	-	-	-	-	-	-	-	-	-	-	-	-	
Other infective and parasitic disease	-	-	-	-	-	-	-	-	-	-	-	-	
Malignant neoplasm, stomach	4	-	-	-	-	-	-	-	-	3	1	-	39
Malignant neoplasm, lung, bronchus	6	-	-	-	-	-	-	-	-	4	2	-	
Malignant neoplasm, breast	5	-	-	-	-	-	-	-	1	1	2	1	
Malignant neoplasm, uterus	1	-	-	-	-	-	-	-	-	1	-	-	
Other malignant and lymphatic neoplasms	20	-	-	-	1	-	-	-	-	5	4	10	
Leukaemia, aleukaemia	3	-	-	-	-	-	1	-	-	-	2	-	
Diabetes	3	-	-	-	-	-	-	-	1	-	2	-	
Vascular lesions of nervous system	25	-	-	-	-	-	-	-	2	3	6	14	25
Coronary disease, angina	30	-	-	-	-	-	-	-	5	9	5	11	73
Hypertension with heart disease	6	-	-	-	-	-	-	-	-	3	1	2	
Other heart disease	33	-	-	-	-	-	-	1	1	3	6	22	
Other circulatory disease	4	-	-	-	-	-	1	-	-	1	1	1	
Influenza	3	-	-	-	-	-	-	-	-	-	2	1	27
Pneumonia	12	1	3	-	-	-	-	-	-	1	-	7	
Bronchitis	12	-	-	-	-	-	-	-	2	1	6	3	
Other diseases of the respiratory system	-	-	-	-	-	-	-	-	-	-	-	-	
Ulcer of stomach and duodenum	2	-	-	-	-	-	-	-	-	-	-	2	
Gastritis, enteritis and diarrhoea	-	-	-	-	-	-	-	-	-	-	-	-	
Nephritis and nephrosis	2	-	-	-	-	-	-	1	-	-	1	-	
Hyperplasia of prostate	1	-	-	-	-	-	-	-	-	-	-	1	
Pregnancy, childbirth, abortion	-	-	-	-	-	-	-	-	-	-	-	-	
Congenital malformations	6	3	-	-	1	-	-	-	-	1	1	-	
Other defined and ill-defined diseases	24	6	1	-	-	-	2	-	2	2	4	7	
Motor vehicle accidents	2	-	-	-	-	-	-	1	-	-	-	1	
All other accidents	5	-	-	-	1	-	-	-	1	1	-	2	
Suicide	-	-	-	-	-	-	-	-	-	-	-	-	
Homicide and operations of war	-	-	-	-	-	-	-	-	-	-	-	-	

TABLE IIIC - CAUSES OF DEATH ACCORDING TO AGE

Registrar General's Return

1963

		All ages												Main causes
		Under 4 wks	4 wks - 14 mos	1 - 4 yrs	5 - 14 yrs	15 - 24 yrs	25 - 34 yrs	35 - 44 yrs	45 - 54 yrs	55 - 64 yrs	65 - 74 yrs	75+		
1963	Males													
All causes	112	3	3	-	1	-	3	1	9	18	31	43		
Malignant neoplasm, stomach	2	-	-	-	-	-	-	-	-	1	1	-	-	
Malignant neoplasm, lung, bronchus	6	-	-	-	-	-	-	-	-	4	2	-	-	
Other malig. and lymph. neoplasms	14	-	-	-	1	-	-	-	-	2	2	9	-	24
Leukaemia, aleukaemia	2	-	-	-	-	-	-	-	-	-	2	-	-	
Vascular lesions of nervous system	11	-	-	-	-	-	-	-	1	1	5	6	11	
Coronary disease, angina	22	-	-	-	-	-	-	-	5	6	5	6	-	
Hypertension with heart disease	3	-	-	-	-	-	-	-	-	1	1	1	-	
Other heart disease	9	-	-	-	-	-	-	-	-	-	1	8	-	37
Other circulatory disease	3	-	-	-	-	1	-	-	-	-	1	1	-	
Influenza	3	-	-	-	-	-	-	-	-	-	2	1	-	
Pneumonia	6	-	2	-	-	-	-	-	-	1	-	3	-	18
Bronchitis	9	-	-	-	-	-	-	-	2	1	5	1	-	
Ulcer of stomach and duodenum	1	-	-	-	-	-	-	-	-	-	-	1	-	
Nephritis and Nephrosis	1	-	-	-	-	-	-	-	-	-	1	-	-	
Hyperplasia of prostate	1	-	-	-	-	-	-	-	-	-	-	1	-	
Congenital malformations	2	-	-	-	-	-	-	-	-	1	1	-	-	
Other defined and ill-def. diseases	15	3	1	-	-	-	2	-	1	-	4	4	-	
Motor vehicle accidents	1	-	-	-	-	-	-	1	-	-	-	-	-	
All other accidents	1	-	-	-	-	-	-	-	-	-	-	1	-	
Females														
All causes	99	7	1	-	2	-	1	2	6	21	16	43		
Tuberculosis, other	1	-	-	-	-	-	-	-	-	-	-	1	-	
Syphilitic disease	1	-	-	-	-	-	-	-	-	-	1	-	-	
Malignant neoplasm, stomach	2	-	-	-	-	-	-	-	-	2	-	-	-	
Malignant neoplasm, breast	5	-	-	-	-	-	-	-	1	1	2	1	-	
Malignant neoplasm, uterus	1	-	-	-	-	-	-	-	-	1	-	-	-	15
Other malignant and lymph. neoplasms	6	-	-	-	-	-	-	-	-	3	2	1	-	
Leukaemia, aleukaemia	1	-	-	-	-	-	1	-	-	-	-	-	-	
Diabetes	3	-	-	-	-	-	-	-	1	-	2	-	-	
Vascular lesions of nervous system	14	-	-	-	-	-	-	-	1	2	3	8	14	
Coronary disease, angina	8	-	-	-	-	-	-	-	-	3	-	5	-	
Hypertension with heart disease	3	-	-	-	-	-	-	-	-	2	-	1	-	
Other heart disease	24	-	-	-	-	-	-	1	1	3	5	14	-	36
Other circulatory disease	1	-	-	-	-	-	-	-	-	1	-	-	-	
Pneumonia	6	1	1	-	-	-	-	-	-	-	-	4	-	9
Bronchitis	3	-	-	-	-	-	-	-	-	-	1	2	-	
Ulcer of stomach and duodenum	1	-	-	-	-	-	-	-	-	-	-	1	-	
Nephritis and nephrosis	1	-	-	-	-	-	-	1	-	-	-	-	-	
Congenital malformations	4	3	-	-	1	-	-	-	-	-	-	-	-	
Other defined and ill-def. diseases	9	3	-	-	-	-	-	-	1	2	-	3	-	
Motor vehicle accidents	1	-	-	-	-	-	-	-	-	-	-	1	-	
All other accidents	4	-	-	-	1	-	-	-	1	1	-	1	-	

TABLE IV - CAUSES OF DEATH ACCORDING TO AGE

Compiled locally

1962

1962	All ages	Under 4 weeks	4 wks - 11 mos	1 year	2 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 +	Main causes
<u>Males</u>														
All causes	128	2	3	-	-	-	2	2	3	5	22	43	46	
Tuberculosis, respiratory	1	-	-	-	-	-	-	-	-	-	1	-	-	
Tuberculosis, other	1	-	-	-	-	-	-	-	-	1	-	-	-	
Malignant neoplasm, stomach	2	-	-	-	-	-	-	-	-	-	1	1	-	21
Malignant neoplasm, lung, bronchus	7	-	-	-	-	-	-	-	-	-	2	5	-	
Other malig. and lymph. neoplasms	11	-	-	-	-	-	-	-	-	-	2	6	3	
Leukaemia, aleukaemia	1	-	-	-	-	-	1	-	-	-	-	-	-	
Vascular lesions of nervous system	18	-	-	-	-	-	-	-	-	-	4	6	8	=18
Coronary disease, angina	22	-	-	-	-	-	-	-	2	2	4	9	5	46
Other heart disease	22	-	-	-	-	-	-	-	-	-	4	5	13	
Other circulatory disease	2	-	-	-	-	-	-	-	-	-	-	1	1	
Influenza	1	-	-	-	-	-	-	-	-	-	-	-	1	23
Pneumonia	5	-	1	-	-	-	-	-	1	-	1	1	1	
Bronchitis	17	1	-	-	-	-	-	-	-	2	1	4	9	
Ulcer of stomach and duodenum	1	-	-	-	-	-	-	-	-	-	1	-	-	
Gastritis, enteritis and diarrhoea	1	-	1	-	-	-	-	-	-	-	-	-	-	
Nephritis and nephrosis	2	-	-	-	-	-	-	-	-	-	-	2	-	
Hyperplasia of prostate	1	-	-	-	-	-	-	-	-	-	-	-	1	
Congenital malformations	1	-	1	-	-	-	-	-	-	-	-	-	-	
Other defined and ill-def. diseases	8	1	-	-	-	-	-	1	-	-	1	2	3	
Motor vehicle accidents	2	-	-	-	-	-	1	-	-	-	-	1	-	4
All other accidents	1	-	-	-	-	-	-	-	-	-	-	-	1	
Suicide	1	-	-	-	-	-	-	1	-	-	-	-	-	
<u>Females</u>														
All causes	104	5	2	-	-	-	1	1	-	9	17	18	51	
Tuberculosis, respiratory	1	-	-	-	-	-	-	-	-	1	-	-	-	
Malignant neoplasm, stomach	3	-	-	-	-	-	-	-	-	-	2	1	-	17
Malignant neoplasm, lung, bronchus	2	-	-	-	-	-	-	-	-	-	1	-	1	
Malignant neoplasm, breast	3	-	-	-	-	-	-	-	-	1	2	-	-	
Malignant neoplasm, uterus	3	-	-	-	-	-	-	1	-	2	-	-	-	
Other malig. and lymph. diseases	5	-	1	-	-	-	-	-	-	1	-	-	3	4
Leukaemia, aleukaemia	1	-	-	-	-	-	-	-	-	-	1	-	-	
Diabetes	2	-	-	-	-	-	-	-	-	-	-	1	1	
Vascular lesions of nervous system	13	-	-	-	-	-	-	-	-	-	1	3	9	=13
Coronary disease, angina	13	-	-	-	-	-	-	-	-	-	4	2	7	45
Other heart disease	23	-	-	-	-	-	-	-	-	2	1	5	15	
Other circulatory disease	9	-	-	-	-	-	-	-	-	-	-	3	6	
Pneumonia	3	1	-	-	-	-	-	-	-	-	-	-	2	7
Bronchitis	4	-	-	-	-	-	-	-	-	-	-	-	4	
Ulcer of stomach and duodenum	2	-	-	-	-	-	-	-	-	-	-	2	-	
Gastritis, enteritis and diarrhoea	1	-	-	-	-	-	-	-	-	-	1	-	-	
Pregnancy, childbirth, abortion	1	-	-	-	-	-	1	-	-	-	-	-	-	
Congenital malformations	1	-	1	-	-	-	-	-	-	-	-	-	-	
Other defined and ill-def. diseases	10	4	-	-	-	-	-	-	-	1	3	1	1	
Motor vehicle accidents	2	-	-	-	-	-	-	-	-	-	1	-	1	4
All other accidents	1	-	-	-	-	-	-	-	-	-	-	-	1	
Suicide	1	-	-	-	-	-	-	-	-	1	-	-	-	

TABLE IV - CAUSES OF DEATH ACCORDING TO AGE

Compiled locally

1963

1963	All ages	Under 4 weeks	4 wks - 11 mos	1 year	2 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 +	Main causes
<u>Males</u>														
All causes	112	3	3	-	-	1	-	3	1	9	18	31	43	
Malignant neoplasm, stomach	2	-	-	-	-	-	-	-	-	-	1	1	-	24
Malignant neoplasm, lung, bronchus	6	-	-	-	-	-	-	-	-	-	4	2	-	
Other malig. and lymph. neoplasms	14	-	-	-	-	1	-	-	-	-	2	2	9	
Leukaemia, aleukaemia	2	-	-	-	-	-	-	-	-	-	-	2	-	
Vascular lesions of nervous system	11	-	-	-	-	-	-	-	-	1	1	3	6	=1
Coronary disease, angina	22	-	-	-	-	-	-	-	-	5	6	5	6	37
Hypertension with heart disease	1	-	-	-	-	-	-	-	-	-	-	-	1	
Other heart disease	10	-	-	-	-	-	-	-	-	-	1	1	8	
Other circulatory disease	4	-	-	-	-	-	-	1	-	-	1	2	-	
Influenza	2	-	-	-	-	-	-	-	-	-	-	1	1	18
Pneumonia	5	-	1	-	-	-	-	-	-	-	1	-	3	
Bronchitis	11	-	1	-	-	-	-	-	-	2	1	6	1	
Ulcer of stomach and duodenum	1	-	-	-	-	-	-	-	-	-	-	-	1	
Hyperplasia of prostate	1	-	-	-	-	-	-	-	-	-	-	-	1	
Congenital malformations	1	-	-	-	-	-	-	-	-	-	-	1	-	
Other defined and ill-defined dis.	17	3	1	-	-	-	-	2	-	1	-	5	5	
Motor vehicle accidents	1	-	-	-	-	-	-	-	1	-	-	-	-	2
All other accidents	1	-	-	-	-	-	-	-	-	-	-	-	1	
<u>Females</u>														
All causes	100	7	1	-	-	2	-	1	2	6	21	16	44	
Tuberculosis, respiratory	1	-	-	-	-	-	-	-	-	-	-	-	1	
Malignant neoplasm, stomach	2	-	-	-	-	-	-	-	-	-	2	-	-	12
Malignant neoplasm, breast	4	-	-	-	-	-	-	-	-	-	1	2	1	
Malignant neoplasm, uterus	1	-	-	-	-	-	-	-	-	-	1	-	-	
Other malig. and lymph. neoplasms	5	-	-	-	-	-	-	-	-	-	3	2	-	
Diabetes	3	-	-	-	-	-	-	-	-	1	-	2	-	
Vascular lesions of nervous system	16	-	-	-	-	-	-	-	-	1	3	4	8	=1
Coronary disease, angina	9	-	-	-	-	-	-	-	-	-	4	-	5	37
Hypertension with heart disease	1	-	-	-	-	-	-	-	-	-	-	-	1	
Other heart disease	24	-	-	-	-	-	-	-	1	2	3	4	14	
Other circulatory disease	3	-	-	-	-	-	-	-	-	1	1	1	-	
Pneumonia	6	-	1	-	-	-	-	-	-	-	-	-	5	9
Bronchitis	3	-	-	-	-	-	-	-	-	-	-	1	2	
Ulcer of stomach and duodenum	1	-	-	-	-	-	-	-	-	-	-	-	1	
Nephritis and nephrosis	1	-	-	-	-	-	-	-	1	-	-	-	-	
Congenital malformations	4	3	-	-	-	1	-	-	-	-	-	-	-	
Other defined and ill-def. diseases	10	4	-	-	-	-	-	1	-	-	1	-	4	
Motor vehicle accidents	1	-	-	-	-	-	-	-	-	-	-	-	1	6
All other accidents	5	-	-	-	-	1	-	-	-	1	2	-	1	

TABLE V - CAUSES OF DEATHS AT AGES 75 YEARS AND OVER

Compiled locally

		1962						1963							
		All Causes	75 - 79	80 - 84	85 - 89	90 - 94	95 - 99	Main Causes	All Causes	75 - 79	80 - 84	85 - 89	90 - 94	95 - 99	Main Causes
<u>Males</u>															
All causes		46	19	19	7	1	-		43	20	14	7	1	1	
Other mal. and lymph. neos.		3	1	2	-	-	-	=3	9	3	4	2	-	-	=9
Vasc. lesions of N.S.		8	1	6	1	-	-	=8	6	3	1	2	-	-	=6
Coronary dis., angina		5	4	1	-	-	-	19	6	4	2	-	-	-	15
Hypertension with heart dis.		-	-	-	-	-	-		1	1	-	-	-	-	
Other heart disease		13	4	7	2	-	-		8	2	3	3	-	-	
Other circulatory disease		1	-	-	1	-	-		-	-	-	-	-	-	
Influenza		1	1	-	-	-	-	11	1	-	1	-	-	-	5
Pneumonia		1	-	-	1	-	-		3	2	1	-	-	-	
Bronchitis		9	4	3	1	1	-		1	1	-	-	-	-	
Ulcer of stomach and duod.		-	-	-	-	-	-		1	1	-	-	-	-	
Hyperplasia of prostate		1	1	-	-	-	-		1	1	-	-	-	-	
Other def. and ill-def. dis.		3	2	-	1	-	-		5	1	2	-	1	1	
All other accidents		1	1	-	-	-	-		1	1	-	-	-	-	
<u>Females</u>															
All causes		51	16	15	15	5	-		44	15	15	12	2	-	
Tuberculosis, respiratory		-	-	-	-	-	-		1	-	1	-	-	-	
Malig. neo. lung, bronchus		1	-	1	-	-	-	4	-	-	-	-	-	-	1
Malig. neo. breast		-	-	-	-	-	-		1	-	-	1	-	-	
Other mal. and lymph. neos.		3	1	-	2	-	-		-	-	-	-	-	-	
Diabetes		1	1	-	-	-	-		-	-	-	-	-	-	
Vasc. lesions of N.S.		9	2	2	4	1	-	=9	8	4	2	1	1	-	=8
Coronary disease, angina		7	4	2	1	-	-	28	5	3	1	1	-	-	20
Hypertension with heart dis.		-	-	-	-	-	-		1	-	-	1	-	-	
Other heart disease		15	4	6	5	-	-		14	4	5	5	-	-	
Other circulatory disease		6	2	-	2	2	-		-	-	-	-	-	-	
Pneumonia		2	-	1	-	1	-	6	5	2	1	2	-	-	7
Bronchitis		4	1	2	-	1	-		2	1	-	-	1	-	
Ulcer of stomach and duod.		-	-	-	-	-	-		1	-	1	-	-	-	
Other def. and ill-def. dis.		1	1	-	-	-	-		4	1	2	1	-	-	
Motor vehicle accidents		1	-	1	-	-	-	2	1	-	1	-	-	-	2
All other accidents		1	-	-	1	-	-		1	-	1	-	-	-	

TABLE VI - MAIN CAUSES OF DEATH NO. (a) BY MONTH

1962

DEATHS AGED 0-74 YEARS

Month Registered	All causes	Main causes	Other causes	Circ. disease	Cancer Lung	Other	Vasc. les. C.N.S.	Resp. disease
JANUARY	24	15	8	3	1	4	2	3
FEBRUARY	9	5	4	2	-	1	2	-
MARCH	12	9	5	6	-	2	1	-
APRIL	11	10	1	6	-	2	1	1
MAY	9	6	3	4	-	1	1	-
JUNE	8	6	2	3	1	-	-	2
JULY	11	9	2	3	-	3	2	1
AUGUST	6	4	2	2	-	-	2	-
SEPTEMBER	6	5	1	1	1	2	-	1
OCTOBER	9	9	-	4	3	1	1	-
NOVEMBER	14	10	4	3	1	2	1	3
DECEMBER	17	16	1	6	1	5	1	3
1962	135	102	33	43	8	23	14	14

DEATHS AGED 75+

JANUARY	12	11	1	7	-	-	1	3
FEBRUARY	8	6	2	6	-	-	-	-
MARCH	15	15	-	8	1	-	4	2
APRIL	7	7	-	4	-	-	1	2
MAY	5	4	1	1	-	1	-	2
JUNE	10	10	-	2	-	3	3	2
JULY	-	-	-	-	-	-	-	-
AUGUST	7	6	1	3	-	-	3	-
SEPTEMBER	5	3	2	2	-	1	-	-
OCTOBER	7	6	1	3	-	1	2	-
NOVEMBER	10	9	1	5	-	-	2	2
DECEMBER	11	11	-	7	-	-	1	3
1962	97	88	9	48	1	6	17	16

1963

DEATHS AGED 0-74 YEARS

JANUARY	17	13	4	6	1	3	1	2
FEBRUARY	19	17	2	8	-	1	2	6
MARCH	18	14	4	2	2	4	2	4
APRIL	9	5	4	3	-	-	2	-
MAY	9	7	2	4	-	-	2	1
JUNE	12	6	6	2	1	3	-	-
JULY	6	3	3	1	1	-	1	-
AUGUST	8	5	3	2	-	2	1	-
SEPTEMBER	5	5	-	2	-	2	1	-
OCTOBER	4	4	-	1	-	2	-	1
NOVEMBER	9	9	-	4	1	3	1	-
DECEMBER	9	5	4	4	-	-	-	1
1963	125	93	32	39	6	20	13	15

DEATHS AGED 75+

JANUARY	11	9	2	3	-	1	2	3
FEBRUARY	12	11	1	6	-	1	2	2
MARCH	10	8	2	4	-	-	1	3
APRIL	7	6	1	3	-	1	1	1
MAY	9	9	-	4	-	3	1	1
JUNE	5	3	2	2	-	-	1	-
JULY	4	2	2	1	-	-	1	-
AUGUST	2	2	-	-	-	-	2	-
SEPTEMBER	5	4	1	2	-	2	-	-
OCTOBER	5	5	-	2	-	-	2	1
NOVEMBER	6	4	2	3	-	1	-	-
DECEMBER	11	8	3	5	-	1	1	1
1963	87	71	16	35	-	10	14	12

TABLE VII - MAIN CAUSES OF DEATH ETC. (b) BY QUARTER

All ages	Main causes in detail						
	All causes	Main causes	Other causes	(410-468) Circulatory diseases	(140-205) Cancer	(330-334) Vasc. les. C.N.S.	(470-527) Resp. diseases
1962	232	190	42	91	38	31	30
%	100%	82%	18%	40%	16%	13%	13%
1963	212	164	48	74	36	27	27
%	100%	77%	23%	34%	17%	13%	13%

England and Wales

1962	557,636	461,679	95,957	208,217	101,608	78,297	73,557
%	100%	83%	17%	38%	18%	14%	13%
1963	572,868	477,021	95,847	213,522	102,416	80,340	80,743
%	100%	83%	17%	37%	18%	14%	14%

Compiled locally

1962

Aged 0 - 74 years

1st qtr.	44	27	17	11	8	5	3
2nd qtr.	28	22	6	13	4	2	3
3rd qtr.	23	18	5	6	6	4	2
4th qtr.	40	35	5	13	13	3	6
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	135	102	33	43	31	14	14
	100%	75%	25%	32%	23%	10%	10%

Aged 75 years and over

1st qtr.	35	32	3	21	1	5	5
2nd qtr.	22	21	1	7	4	4	6
3rd qtr.	12	9	3	5	1	3	-
4th qtr.	28	26	2	15	1	5	5
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	97	88	9	48	7	17	16
	100%	91%	9%	49%	7%	17%	16%

Total 232 190 42 91 38 31 30

Deaths from each main cause as percentage of total deaths at all ages from that cause:

Aged 0 - 74 years

1st qtr.	56%	46%	85%	35%	89%	50%	27%
2nd qtr.	56%	51%	85%	65%	50%	33%	33%
3rd qtr.	66%	67%	63%	54%	86%	57%	100%
4th qtr.	59%	85%	72%	46%	93%	38%	54%
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Year	58%	54%	78%	47%	82%	45%	47%

Aged 75 years and over

1st qtr.	44%	54%	15%	65%	11%	50%	63%
2nd qtr.	44%	49%	15%	35%	50%	67%	67%
3rd qtr.	34%	33%	37%	46%	14%	43%	-%
4th qtr.	41%	15%	28%	54%	7%	62%	46%
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Year	42%	46%	22%	53%	18%	55%	53%

TABLE VII (continued)

	All causes	Main causes	Other causes	(140-168) Circulatory diseases	(140-205) Cancer	(330-334) Vasc. les. C.R.S.	(470-527) Resp. diseases
Compiled locally							
1963							
Aged 0 - 74 years							
1st qtr.	54	44	10	16	11	5	12
2nd qtr.	30	13	12	9	4	4	1
3rd qtr.	19	13	6	5	5	3	-
4th qtr.	22	18	4	9	6	1	2
	<u>125</u>	<u>83</u>	<u>32</u>	<u>39</u>	<u>26</u>	<u>13</u>	<u>15</u>
	100%	74%	26%	31%	21%	10%	12%
Aged 75 years and over							
1st qtr.	33	28	5	13	2	5	8
2nd qtr.	21	15	3	9	4	3	2
3rd qtr.	11	8	3	3	2	3	-
4th qtr.	22	16	5	10	2	3	2
	<u>87</u>	<u>71</u>	<u>16</u>	<u>35</u>	<u>10</u>	<u>14</u>	<u>12</u>
	100%	82%	18%	40%	12%	16%	14%
Total	212	164	48	74	36	27	27

Deaths from each main cause as percentage of total deaths at all ages from that cause:

Aged 0 - 74 years

1st qtr.	62%	61%	67%	55%	85%	50%	60%
2nd qtr.	59%	50%	80%	50%	50%	57%	33%
3rd qtr.	63%	62%	67%	62%	71%	50%	-%
4th qtr.	50%	51%	44%	47%	75%	25%	50%
Year	<u>59%</u>	<u>57%</u>	<u>67%</u>	<u>53%</u>	<u>72%</u>	<u>48%</u>	<u>56%</u>

Aged 75 years and over

1st qtr.	38%	39%	33%	45%	15%	50%	40%
2nd qtr.	41%	50%	20%	50%	50%	43%	67%
3rd qtr.	37%	38%	33%	38%	29%	50%	-%
4th qtr.	50%	49%	56%	53%	25%	75%	50%
Year	<u>41%</u>	<u>43%</u>	<u>33%</u>	<u>47%</u>	<u>28%</u>	<u>52%</u>	<u>44%</u>

Deaths at ages of 65 and over as percentage of deaths at all ages:

	65 to 74 years		75 years and over	
	Northfleet	England and Wales	Northfleet	England and Wales
1962	61 (26%)	26%	97 (42%)	43%
1963	47 (22%)	25%	87 (41%)	44%

TABLE VIII - DEATHS BY QUARTER AND PLACE

		1st quarter	2nd quarter	3rd quarter	4th quarter	Year
Number of deaths						
	1960	59	49	36	52	196
	1961	60	45	38	47	190
	1962	79	50	35	68	232
	1963	87	51	30	44	212
Adjusted (C.F.) Death Rates						
Northfleet	1960	13.3	11.0	8.1	11.7	11.0
	1961	13.0	9.8	8.3	10.2	10.4
	1962	16.7	10.6	7.4	14.4	12.3
	1963	18.8	11.0	6.5	9.5	11.4
England & Wales	1960	13.4	10.9	9.8	12.2	11.5
	1961	15.6	10.9	9.5	11.9	12.0
	1962	15.5	11.1	9.4	11.9	11.9
	1963	17.0	11.0	9.6	11.2	12.2

1962

Deaths at home, in hospital and elsewhere

All ages		1st qr.		2nd qr.		3rd qr.		4th qr.		1962		
		M	F	M	F	M	F	M	F	M	F	P
Home		24	16	14	6	11	8	18	20	67	50	117
Hospital		23	15	12	17	12	4	13	17	60	53	113
Elsewhere		-	1	1	-	-	-	-	-	1	1	2
		47	32	27	23	23	12	31	37	128	104	232
Aged 75+												
Home		14	9	6	2	2	6	4	9	26	26	52
Hospital		5	8	6	8	3	1	6	8	20	25	45
Elsewhere		-	-	-	-	-	-	-	-	-	-	-
		19	17	12	10	5	7	10	17	46	51	97

Deaths at Home or Hospital as % of all deaths

All Ages		51	50	52	26	48	67	58	54	52	48	50
Home		49	47	44	74	52	33	42	46	47	51	49
Hospital		-	3	4	-	-	-	-	-	1	1	1
Elsewhere		100	100	100	100	100	100	100	100	100	100	100
Aged 75+												
Home		74	53	50	20	40	86	40	53	57	51	54
Hospital		26	47	50	80	60	14	60	47	43	49	46
Elsewhere		-	-	-	-	-	-	-	-	-	-	-
		100	100	100	100	100	100	100	100	100	100	100

T B L E VIII- DEATHS BY QUARTER AND PLACE (continued)

1963

Deaths at home, in hospital and elsewhere

All ages	1st qr.		2nd qr.		3rd qr.		4th qr.		1963		
	M	F	M	F	M	F	M	F	M	F	P
Home	27	24	12	14	3	5	13	11	55	54	109
Hospital	17	19	16	9	11	11	12	7	56	46	102
Elsewhere	-	-	-	-	-	-	1	-	1	-	1
	44	43	28	23	14	16	26	18	112	100	212

Aged 75+

Home	6	15	7	5	1	2	7	7	21	29	50
Hospital	6	6	6	3	4	4	6	2	22	15	37
Elsewhere	-	-	-	-	-	-	-	-	-	-	-
	12	21	13	8	5	6	13	9	43	44	87

Deaths at home or hospital as % of all deaths

All ages	61	56	43	61	21	31	50	61	49	54	52
Home	39	44	57	39	79	69	46	39	50	46	48
Hospital	-	-	-	-	-	-	4	-	1	-	0
Elsewhere	100	100	100	100	100	100	100	100	100	100	100

Aged 75+

Home	50	71	54	62	20	33	54	78	49	66	57
Hospital	50	29	46	38	80	67	46	22	51	34	43
Elsewhere	-	-	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	100	100	100

Deaths in Hospital

		Northfleet U.D.		Dartford Town		Dartford R.D.	
1962	All ages		49%		73%		57%
	Aged 75+		47%		75%		50%
1963	All ages		48%		72%		61%
	Aged 75+		43%		72%		61%

DEATHS FROM RESPIRATORY DISEASE

Whole Years	Aged 0 - 74 years			Aged 75 and over		
	Respiratory disease.	All causes.	% Respiratory.	Respiratory disease.	All causes.	% Respiratory.

1962	14	135	10%	16	97	16%
1963	15	125	12%	12	87	14%

First quarters

1962	3	44	7%	5	35	14%
1963	12	54	22%	8	33	24%

1962 Virus B influenza first quarter. Fog 3rd to 7th December.
1963 Exceptionally cold first quarter.

TABLE IX - PREVALENCE OF INFECTIOUS DISEASES (other than tuberculosis)

	All ages	Under one	1-4	5-9	10-14	15-24	25-44	45-64	65+
1962									
Whooping cough	1	-	-	-	1	-	-	-	-
Measles	122	3	59	59	-	-	1	-	-
Pneumonia	3	-	-	-	-	-	-	2	1
Food poisoning	1	-	-	-	-	-	1	-	-
Total	127	3	59	59	1	-	2	2	1
1963									
Puerperal pyrexia	3	-	-	-	-	3	-	-	-
Whooping cough	18	4	7	5	-	1	-	1	-
Dysentery	1	-	-	1	-	-	-	-	-
Measles	134	3	74	49	7	1	-	-	-
Pneumonia	9	-	-	-	-	-	-	2	7
Total	165	7	81	55	7	5	-	3	7

The following non-notifiable diseases were reported from the schools:

	1962	1963
Chicken pox	1	49
Impetigo	-	3
Mumps	1	71
Rubella	4	71
Glandular fever	-	2

MEASLES. By ward and month, according to date of notification.

	East	West	South-East	South	Northfleet U.D.
1962					
January/June	-	-	-	-	-
July	-	5	-	-	5
August	-	12	-	-	12
September	6	2	-	-	8
October	5	4	3	1	13
November	22	3	13	2	40
December	7	6	17	23	53
Total	40	32	33	26	131
1963					
January	21	18	2	8	49
February	17	9	8	11	45
March	5	1	-	7	13
April	3	1	-	-	4
May	1	1	-	-	2
June	6	1	-	1	8
July	1	-	-	-	1
August	-	1	-	-	1
September	-	1	-	-	1
October	1	-	-	-	1
November	-	-	-	-	-
December	-	-	-	-	-
Total	55	33	10	27	125

Table 11 - (continued)

TABLE 11 - B.T. & C.T. cases, according to date of notification

	November	December	January	February	March	April	Total for 6 months
1951-1952	-	-	-	-	-	-	-
1952-1953	27	28	93	47	25	16	236
1953-1954	-	-	-	-	-	1	1
1954-1955	1	-	-	1	4	7	13
1955-1956	-	1	-	-	-	1	2
1956-1957	-	35	17	1	5	14	72
1957-1958	-	-	-	-	-	-	-
1958-1959	-	-	1	23	72	43	139
1959-1960	-	-	-	-	-	-	-
1960-1961	-	2	29	151	100	56	338
1961-1962	2	-	-	-	-	-	8
1962-1963	40	53	49	45	13	4	204
1963-1964	-	-	-	-	1	2	3

Year	Total for 12 months	Year	Total for 12 months
1951	335	1957	224
1952	75	1958	9
1953	188	1959	223
1954	2	1960	2
1955	478	1961	400
1956	46	1962	131
		1963	125

TABLE X - TUBERCULOSIS, 1962 & 1963

(a) RESPIRATORY

NOTIFICATIONS in last ten years

1954	19	1956	11	1958	5	1960	15	1962	12
1955	5	1957	24	1959	11	1961	9	1963	7

NOTIFICATIONS BY AGE

1962	Total	0-4	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+
Males	11	-	1	-	1	2	-	-	4	1	2	-
Females	1	-	-	-	-	1	-	-	-	-	-	-
	12	-	1	-	1	3	-	-	4	1	2	-

1963	Total	0-4	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+
Males	5	-	-	-	-	-	-	-	1	2	1	1
Females	2	-	-	-	-	-	-	-	-	1	-	1
	7	-	-	-	-	-	-	-	1	3	1	2

Of those notified in 1962 only two were infectious, a male aged 42 and a male aged 57. The former was from India and was later lost sight of in spite of enquiries which included an approach to the Embassy.

Of those notified in 1963 two were infectious, a male aged 50 and a female aged 53. The latter had been found clear in 1957 when x-rayed as a contact of her son who was notified in 1950 and regarded as recovered in 1957. Relatives of family elsewhere were tuberculous.

TABLE X - TUBERCULOSIS

(a) RESPIRATORY (continued)

CASES OF RESPIRATORY TUBERCULOSIS ON THE TUBERCULOSIS REGISTER ON DECEMBER 31st.

	Male	Female	Persons		Male	Female	Persons
1955	125	85	210	1960	141	103	244
1956	129	83	212	1961	137	103	240
1957	137	68	225	1962	122	89	211
1958	135	95	230	1963	107	75	182
1959	141	99	240				

CHANGES IN THE REGISTER IN 1962 and 1963

Additions:	1962	1963	Removals:	1962	1963
New notifications	12	7	Lost sight of	2	22
Came into district	5	3	Left district	12	1
Restored to register	-	2	Died	6	2
	<u>17</u>	<u>12</u>	Recovered	21	16
			*No reason given	5	-
			*Late removals following review of register.	<u>46</u>	<u>41</u>

1962

The 6 cases removed from the register after information of death were:

Sex	Year of birth	Year tuberculosis registered	Underlying cause of death	Contributory cause of death	Infectious when disease found?	Year of death
M	1892	1956	Ia Myocarditis	II Acute	Yes	1962
			b Acute bronchitis	gastritis		
M	1895	1951	Ia Myocardial degeneration	II Pulmonary	?	1962
			b Chr. bronchitis and emphysema	tuber- culosis		
M	1908	1951	*Ia Myocarditis	-	?	1962
			b Chr. phthisis & Chr. bronchitis			
M	1912	1959	Ia Myocarditis	-	No	1962
			b Acute bronchitis			
F	1903	1961	Ia Status asthmaticus	II Chronic Bronchitis	Yes	1962
*the only death of these five assigned to tuberculosis.						
M	1906	1942	?	?	?	?

The following death occurred of a patient whose name had previously been removed from the register.

F	1917	1944	Ia Myocardial degeneration	-	Yes	1962
			b Pulmonary tuberculosis			

1963

The two cases removed from the register after information of death were:

M	1985	1949	Ia Chr. myocarditis	-	Yes	1963
			b Chr. bronchitis			
M	1900	1957	Ia Coronary thrombosis	II Pulmonary	Yes	1963
			b Arteriosclerosis	tuberculosis		

The following death of a person not on the register was found at p.m. to be due to respiratory tuberculosis though the information was too late for assignment to that cause in the statistics of the Registrar General.

F	1880	Not on tuberculosis register	Ia Bronchopneumonia	II Diabetes	Disease found p.m.	1963
			b Immobilisation			
			c Congestive cardiac failure			

T B I N - T U B E R C U L O S I S
(c) R A T I O N A L I Z E D (continued)

1962-1963 SERVICE

			Over 45 Service	Routine Service			
			Industry etc. (Inc. Gravesend)	Industry etc.		Public	
			Males	M	F	M	F
No. X-rayed	1962	(i)	1643	1382	315	747	111
		(ii)	1399	-	-	-	-
	1963	(i)	1518	-	-	-	-
		(ii)	1414	-	-	-	-
Active Tuberculosis							
Tuberculosis	1962	(i)	1	0	0	1	0
		(ii)	0	-	-	-	-
	1963	(i)	0	-	-	-	-
		(ii)	0	-	-	-	-
Inactive Tuberculosis							
Tuberculosis	1962	(i)	19	3	1	7	6
		(ii)	6	-	-	-	-
	1963	(i)	6	-	-	-	-
		(ii)	12	-	-	-	-
% Active Tuberculosis							
Tuberculosis	1962	(i)	0.6	0	0	1.3	0
		(ii)	0	-	-	-	-
	1963	(i)	0	-	-	-	-
		(ii)	0	-	-	-	-
Lung Cancer							
Lung Cancer	1962	(i)	2	2	0	0	0
		(ii)	0	-	-	-	-
	1963	(i)	1	-	-	-	-
		(ii)	0	-	-	-	-

GRAVESEND CHEST CLINIC. CONTACTS, WHOLE AREA (Gravesend, Northfleet, etc.)

Number of persons examined as contacts:	1962	1963
Contacts examined for first time	534	601
Contacts examined who had attended in previous years	578	361
Contacts re-attended during year	198	169
Total examinations	<u>1310</u>	<u>1131</u>

Examined as contacts of new cases: 171 161

Number of contacts found tuberculous:	Age 0 - 14	4	1
	15 - 25	3	-
	Over 25	<u>-</u>	<u>3</u>
		<u>7</u>	<u>4</u>

Tuberculin reaction of contacts attending for first time:

Negative				Positive			
		1962	1963			1962	1963
Age	0 - 5	125	96	Age	0	-	-
	6 - 14	35	85		1 - 3	1	3
	15 - 20	16	11		4 - 6	4	5
	21 - 25	4	13		7 - 14	10	10
	26 - 35	22	12		Over 14	<u>97</u>	<u>62</u>
	Over 35	<u>3</u>	<u>6</u>			<u>112</u>	<u>80</u>
		<u>205</u>	<u>223</u>				

Number of B.C.G. Vaccinations:	1962	1963
	216	197

TABLE X - TUBERCULOSIS (continued)

(b) NON-RESPIRATORY

NOTIFICATIONS in last ten years

1954	1	1956	-	1958	1	1960	-	1962	1
1955	1	1957	-	1959	1	1961	4	1963	3

The notification in 1962 was a female aged 18 with tuberculous glands of neck.

Those notified in 1963 were a male aged 72 with tuberculous glands of neck, a female immigrant aged 34 with a tuberculous spine and a female aged 47 with a tuberculous sternum.

CASES OF NON-RESPIRATORY TUBERCULOSIS ON THE REGISTER ON DECEMBER 31st .

	Male	Female	Persons		Male	Female	Persons
1955	10	9	19	1960	6	11	17
1956	10	11	21	1961	6	14	20
1957	8	11	19	1962	1	12	13
1958	8	11	19	1963	1	12	13
1959	6	12	18				

CHANGES IN THE REGISTER IN 1962 and 1963

Additions:	1962	1963	Removals:	1962	1963
New notifications	1	3	Lost sight of	-	3
Came into district	-	1	Left district	1	-
Restored to register	-	-	Died	1	-
	<u>1</u>	<u>4</u>	Recovered	1	1
			Late removal on review of register	<u>5</u>	<u>-</u>
				<u>8</u>	<u>4</u>

The case removed from the register following death in 1962 was a male aged 45 with tuberculosis of spine. Cause of death was coronary disease.

DEATHS

In 1962 there was one. In 1963 there was none.

The death in 1962 was an immigrant male aged 46 not on our register. Cause of death was constrictive pericarditis due to tuberculosis.

TABLE XI - VENEREAL DISEASES, ETC.

	1962			1963
NORTHFLEET	Male	Female	Persons	Persons
New patients:				
Syphilis	1	-	1	-
Gonorrhoea	7	1	8	5
Other conditions	6	3	9	26
Total attendances from Northfleet			133	Information
Defaulted before treatment completed			1	for 1963 not sought

ALL AREA SERVED BY CLINIC

Discharged cured:

Syphilis	1	2	3	"	"
Gonorrhoea	26	14	40	"	"
Other conditions	106	70	176	"	"

TABLE XII.- VACCINATIONS

Virus Diseases (a) POLIOMYELITIS

Vaccinations received in the 5 years ending Dec. 31st (a) 1962, (b) 1963.

Born	Second doses						(a)		(b)	
	1958	1959	Injected 1960	1961	1962	Oral 1962	1958- 1962	Inj.+ Oral 1963	Oral 1963	1959- 1963
1957-63	228	300	313	382	65	273	1561	1	407	1741 [±]
1943-56	2141	483	43	117	9	13	2806		8	673 [±]
1933-42	)	)	123	163	11	35	)		28)
1921-32	) 260	) 850	) 440	) 524	) 31	) 54	) 2504	) 1	) 17	) 2290
Others	)	)	)	13))))))
Total	2629	1633	919	1199	116	375	6871	2	460	4704

Third doses										
1957-63	15	310	299	353	334	273	1584	42	407	2018
1943-56	245	2401	344	219	107	13	3329	3	8	3095 [±]
1933-42	)	)	546	124	142	35	)	4	28)
1921-32	) 3	) 374	) 180	) 423	) 372	) 54	) 2271	) 4	) 17	) 2321
Others))))))))))
Total	263	3085	1369	1137	955	375	7184	53	460	7434

Percentage of young population vaccinated

(a) with 2nd dose in 5 years ending 31st Dec. 1962 and 31st Dec. 1963

Born	Estimated population Dec. 1962	No. had dose 1958-62	% of population	Estimated population Dec. 1963	No. had dose 1959-63	% of population
1957-62	2336	1561	67%	-	-	-
1957-63	-	-	-	2827	1741	62%
1943-56	4300	2806	65%	4300	673	16%
1943-62	6636	4367	66%	-	-	-
1943-63	-	-	-	7127	2414	34%

(b) with 3rd dose in 5 years ending 31st Dec. 1962 and 31st Dec. 1963

1957-62	2336	1584	68%	-	-	-
1957-63	-	-	-	2827	2108	71%
1943-56	4300	3329	77%	4300	3095	72%
1943-62	6636	4913	74%	-	-	-
1943-63	-	-	-	7127	5113	72%

± Vaccination began in 1956, some 3rd doses received their second doses in 1956 or 1957. 2nd Doses of incoming population not recorded here when given before arrival. Thus more with 3rd doses than with 2nd doses with years 1958-63.

Fourth doses

The 4th dose is given shortly after school entry therefore those receiving 4th doses when first provided in 1961 would still be in the 1952-58 age group in 1963.

Born	Est. pop.	4th dose 1961	4th dose 1962	4th dose 1963	Total	Percentage
1952-58	2170	1453	223	218	1876	86%

COMPARISON WITH OTHER AREAS. Vaccinations in five years expressed as percentage of population group.

		Northfleet U.D.	Dartford R.D.	Dartford B.	Kent A.C. [±]
Vaccinated)				
1958-62	) 2nd dose	66%	76%	73%	87%
Born 1943-62	) 3rd dose	74%	84%	75%	76%
Vaccinated)				
1959-63	) 2nd dose	34%	42%	36%	-
Born 1943-63	) 3rd dose	72%	84%	74%	81%

± Vaccinations since 1956 for Kent A.C.

TABLE XII- VACCINATIONS (continued)

(b) SMALLPOX

NUMBERS VACCINATED AND REVACCINATED by age at date of vaccination.

Year	Vaccinated					Total
	Under 1 year	1 year	2 - 4	5 - 14	15 or over	
1963	?	105	?	?	?	?
1962	283	37	66	166	247	799
1961	263	24	13	8	2	310
1959	226		15	6	4	251
	Revaccinated					
1963	-	?	?	9*	?	?
1962	-	1	43	267	578	889
1961	-	-	-	2	2	4
1959	-	-	-	-	4	4

For the year 1960 no figures in this form were available.
*Aged 5 to 7 years.

INFANT VACCINATION RATE

Up to the end of 1961 most infants who were vaccinated were vaccinated in the first year of life but in 1962 more infants than in former years were vaccinated at a later age. In 1963 the second year of life was advocated as an age for vaccination. The percentage to the number of births in a given year of those vaccinated while under one year of age in that year is used here as a vaccination rate up to 1962.

	Number of live births	Number vaccinated under 1 year	Percentage of births of those vaccinated
1962	479	283	59%
1961	436	263	60%
1959	356	226	64%

SECOND YEAR VACCINATION RATE

With practice changing to vaccination in the second year of life the County no longer record vaccinations at aged under 1 year. The appropriate rate in future will be the vaccinations done as a percentage of infants surviving to the age of one year.

	Infants aged 1 year in January	Vaccinations done at ages 12 - 23 months	Percentage
1963	463	105	23%
1962	427	37	9%
1961	422	24	6%

SCHOOL CHILD IMMUNITY - DECEMBER 1963 (approximate)

Estimated Population aged 5-14 Dec. 1963	Vacc. or revacc. before 1962 in school years	Vaccin- ated 1962 (166 x 0.9)	Revacc- inated 1962 (267 x 0.9)	Vaccin- ated 1963 (no longer recorded)	Revacc- inated 1963 (aged 5-7 yrs)	Total vacc. or revacc. in school pop. by Dec. 1963	% aged 5-14 with immunity Dec. 1963
3011	say 80*	150	240	say 10	9	489	16%

*roughly 10 per year.

TABLE XII- VACCINATIONS (continued)

(b) SMALLPOX (continued)

SCHOOL CHILD REVACCINATIONS - December 1963 (approximate)

Infant vaccination rate	Number eligible for revaccination	Revaccinated before 1962 in school years	Revaccinated 1962	Revaccinated 1963 (aged 5-7)	Total revaccinated in school years Dec. 1963	% of those eligible with immunity from revaccination
60%	1807	say 40 [±]	240	9	289	16%
[±] roughly 5 per year.						

COMPARISON WITH OTHER AREAS

	Northfleet Urban Dis.	Dartford Rural Dis.	Dartford Borough	Kent L.C.	England & Wales
Percentage of 1962 births of those vaccinated under 1 year in 1962	59%	74%	72%	63%	49%
Percentage of those vaccinated at age 1 year of population aged 1 year	23%	19%	18%	17%	10%

Bacterial Diseases

(c) DIPHTHERIA

INOCULATIONS EACH YEAR

	Age at 31st December	Primary inoculations done in the year	Reinforcing inoculations done in the year
1963	0 - 4 years	412	235
	5 - 14 years	2	169
1962	0 - 4 years	336	167
	5 - 14 years	7	146
1961	0 - 4 years	413	127
	5 - 14 years	54	179
1960	0 - 4 years	353	30
	5 - 14 years	18	151
1959	0 - 4 years	250	20
	5 - 14 years	4	152
1958	0 - 4 years	266	21
	5 - 14 years	5	147

PRIMARY VACCINATIONS AT AGES 0 - 4 YEARS

Born	V a c c i n a t e d					Vaccinated 1958-1962	Estimated population
	1958	1959	1960	1961	1962		
1962	-	-	-	-	165	165	463
1961	-	-	-	171	140	319	427
1960	-	-	154	182	14	350	422
1959	-	79	170	25	3	277	349
1958	52	150	21	16	6	245	339
Total vaccinated	52	229	345	394	336	1356	2000

TABLE XII- VACCINATIONS (continued)

(c) DIPHTHERIA (continued)

PRIMARY VACCINATIONS AT AGES 0 - 4 YEARS

As at Dec. 1963.	V a c c i n a t e d					Vaccinated 1959-1963	Estimated population
Born	1959	1960	1961	1962	1963		
1963	-	-	-	-	181	181	491
1962	-	-	-	165	214	379	463
1961	-	-	171	148	11	330	427
1960	-	154	182	14	5	355	422
1959	79	170	25	3	1	278	349
Total vaccinated	79	324	378	330	412	1523	2152

At December 1962. Percentage of related population vaccinated

Born	V a c c i n a t e d					Total vaccinated 1958 - 1962
	1958	1959	1960	1961	1962	
1962	-	-	-	-	36%	36%
1961	-	-	-	40%	35%	75%
1960	-	-	37%	43%	3%	83%
1959	-	23%	49%	7%	1%	79%
1958	15%	44%	6%	5%	1%	72%
% of those vaccinated by Dec. 1962	4%	17%	25%	29%	25%	100%
% of 0-4 population of 1962 vaccinated	3%	11%	17%	20%	17%	68%

At December 1963. Percentage of related population vaccinated

Born	V a c c i n a t e d					Total vaccinated 1959 - 1963
	1959	1960	1961	1962	1963	
1963	-	-	-	-	37%	37%
1962	-	-	-	36%	46%	82%
1961	-	-	40%	35%	2%	77%
1960	-	37%	43%	3%	1%	84%
1959	23%	49%	7%	1%	0%	80%
% of those vaccinated by Dec. 1963	5%	21%	25%	22%	27%	100%
% of 0-4 population of 1963 vaccinated	4%	15%	18%	15%	19%	71%

COMPARISON WITH OTHER AREAS

	Northfleet Urban Dis.	Dartford Rural Dis.	Dartford Borough	Kent A.C.
Percentage of estimated population born 1961 vaccinated in 1961 or 1962	75%	85%	87%	83%
Percentage of estimated population born 1962 vaccinated in 1962 or 1963	82%	81%	84%	80%

TABLE XII- VACCINATIONS (continued)

(d) WHOOPING COUGH

PRIMARY VACCINATIONS

Year	Age at Dec. 31st	Age at Dec. 31st.
	0 - 4 years	5 - 14 years
1963	414	2
1962	332	5
1961	400	44
1960	330	14

PRIMARY VACCINATIONS OF THOSE AGED 0 - 4 YEARS ON DECEMBER 31st 1963

Born	V a c c i n a t e d					1959-1963	Estimated population
	1959	1960	1961	1962	1963		
1963	-	-	-	-	184	184	491
1962	-	-	-	164	213	377	463
1961	-	-	171	147	11	329	427
1960	-	154	179	14	5	352	422
1959	130	142	19	3	1	295	349
Total vaccinated	130	296	369	328	414	1537	2152

Percentage of related population vaccinated 1959-63 by year of vaccination.

Born	V a c c i n a t e d					1959-1963
	1959	1960	1961	1962	1963	
1963	-	-	-	-	37%	37%
1962	-	-	-	35%	46%	81%
1961	-	-	40%	34%	3%	77%
1960	-	36%	42%	3%	2%	83%
1959	37%	41%	5%	1%	0%	84%
% of 0-4 vaccinated population Dec. 1963	8%	19%	24%	22%	27%	100%
% of 0-4 total population Dec. 1963	6%	14%	17%	15%	19%	71%

Diphtheria/whooping cough/tetanus combined vaccine was introduced in 1960 hence primary vaccinations from 1960 onwards are similar in number to diphtheria vaccinations.

COMPARISON WITH OTHER AREAS

	Northfleet Urban Dis.	Dartford Rural Dis.	Dartford Borough	Kent A.C.
Percentage of estimated population born 1961 vaccinated in 1961 or 1962	74%	84%	83%	83%
Percentage of estimated population born 1962 vaccinated in 1962 or 1963	81%	79%	83%	80%

(e) TETANUS

In view of the introduction of the combined vaccine in 1960 the numbers of primary vaccinations against tetanus in 1962 and 1963 can be assumed to be almost identical with those for diphtheria vaccination.

(f) TUBERCULOSIS

Children in close contact with patients suffering from tuberculosis are, if necessary, vaccinated with B.C.G. The vaccinations carried out at the Chest Clinic are given in Table X.

Vaccination of school children is carried out by the School Health Services. These children are skin tested and those who do not react are vaccinated. Those who do react are referred to the Chest Physician for further investigation. Figures are not available for these vaccinations.

APPENDIX I.

HOUSING

NEW DWELLINGS

The following dwellings have been completed in the last six years:-

	1958	1959	1960	1961	1962	1963
By Council enterprise	108	140	46	53	41	86
By Private enterprise	<u>51</u>	<u>236</u>	<u>27</u>	<u>97</u>	<u>254</u>	<u>107</u>
	<u>159</u>	<u>376</u>	<u>73</u>	<u>150</u>	<u>295</u>	<u>193</u>

APPLICANTS FOR COUNCIL HOUSES

At the end of March in the years 1960 to 1963 the waiting list for housing applicants has been as follows:-

	Young and Middle-aged Applicants	Aged Applicants
1960	700	180
1961	695	127
1962	831	154
1963	810	203

FAMILIES REHOUSED BY THE COUNCIL

During the years ending in March the numbers rehoused have been:-

1960	116	1961	79	1962	80	1963	82
------	-----	------	----	------	----	------	----

COUNCIL TENANTS TRANSFERRED

The following families were transferred to accommodation more suitable to their requirements:-

1960	37	1961	21	1962	33	1963	46
------	----	------	----	------	----	------	----

HOUSING PRIORITY ON MEDICAL GROUNDS

In 1962 and 1963 there was no precise scheme for the purpose of allocating priority in rehousing on medical grounds.

IMPROVEMENT GRANTS

Number of dwellings improved:			Cost to public purse:	
With discretionary grants	With standard grants		Discretionary grants	Standard grants
1962	18	7	£5,314	£741
1963	16	7	£7,493	£392

UNFIT HOUSES MADE FIT

	By Owner		By Local Authority	
	1962	1963	1962	1963
After informal action by local authority	122	166	-	-
After formal notice under (a) Public Health Acts	11	24	-	-
(b) Sections 9 and 16 Housing Act, 1957	-	-	-	-
Under Section 24, Housing Act, 1957	-	-	-	-

RENT ACT, 1957

No applications for Certificates of Disrepair have been received.

OVERCROWDING

In 1962 and 1963 there were no proceedings to abate statutory overcrowding.

APPENDIX I. (continued)

HOUSING (continued)

REPAIRS: The following are the details of repairs initiated by the Council's Public Health Inspector's:-

	1962	1963
Ceilings repaired or renewed	8	21
Walls, brickwork damp-proofed	43	27
Walls, internal plaster repaired	11	23
Doors and frames repaired or renewed	4	9
Firegrates repaired or renewed	2	1
Fireplaces, brickwork and plasterwork repaired	2	3
Floors repaired or relaid	3	1
Windows, woodwork of frames, sashes or sills repaired or renewed	17	31
Sash lines provided	19	16
Chimney flues repaired	4	1
Sinks repaired or renewed	2	3
Water supply, pipes, etc., repaired	4	19
Water-closets:		
External structure repaired	3	10
Internal structure repaired	7	7
Flushing cistern repaired or renewed	5	25
Pedestal pan and traps repaired or renewed	3	9
Roofs repaired	24	21
Rain-water pipes repaired or renewed	4	5
Eaves gutters repaired or renewed	8	22
Chimney stacks repaired or rebuilt	2	-
Valley gutters repaired or renewed	-	1
Walls, external, repaired	2	-
Yard surfaces repaired or relaid	-	4
Dustbins provided	23	15
Fences repaired or renewed	2	-

HOUSES DEMOLISHED OR CLOSED - HOUSING ACT, 1957

	Houses demolished or closed	
	1962	1963
Unfit houses demolished:		
In Clearance Areas (Part III Housing Act)	17	-
Not in Clearance Areas (Sec.17, etc. Part II)	9	-
Unfit houses closed (Sec.17, etc. Part II)	3	1
Houses acquired under Part V and demolished for redevelopment		

ADDRESSES OF HOUSES DEMOLISHED OR CLOSED

1962	1963
<div> <div>Clearance Areas</div> <div> The Creek, 6, 7, 8, 11, 12, 13 and 14 College Road, 7, 8 and 9 Susannah Cottages, 1, 2, 3, 4, 5, 6 and 7 </div> </div>	<div> <div>Section 17, etc.</div> <div> Coopers Road, 29 and 31 The Creek, 4, 5 and 9 Shepherd Street, 72a, 74, 76 and 78 High Street, Part of 108 Samaritan Grove, 1 Victoria Road, 3 </div> </div> <div> <div>Part V</div> <div> </div> </div>
<div> <div>Nil</div> <div> </div> </div>	<div> <div>Newmans Road, 2</div> <div> </div> </div>

APPENDIX I. (continued)

HOUSING (continued)

PERSONS DISPLACED PRIOR TO CLOSURE OR DEMOLITION OF HOUSES

Year of closure or demolition	Clearance Areas		Section 17, etc.		Part V
1962	Adults	35	Adults	21	
	Children	21	Children	15	
1963	Adults	-	Adults	1	
	Children	-	Children	2	

CARAVANS

The following are the details of licences issued during 1962 and 1963 under the Caravan Sites and Control of Development Act, 1960 which came into effect on the 29th August, 1960:

	1962	1963
Number of site licences in force at end of year	2	2
Number of caravans permitted	12	12

In addition to the above, 4 showman caravans not requiring licences have been stationed in the district in these two years, for the winter periods.

APPENDIX II.

WATER

QUANTITY. The supply has always been sufficient for domestic and drinking purposes.

An obstruction to the main supplying the May Avenue area caused serious deficiency of supply to a caravan site in 1962 but this was remedied by the renewal of 50 yards of the main by the Water Board.

QUALITY. In the following analyses the results of sampling are summarised by use of the following indicators:

Bacteriological: Number of E. coli (type 1) per 100 ml.

Chemical: Albuminoid ammonia expressed as nitrogen in parts per million.

Bacteriological Analyses

<u>Samples by Medway Water Board</u>	No. of Samples	1962 E. coli type 1	No. of Samples	1963 E. coli type 1
Hazells Pumping Station				
Raw water:			48	None
Raw water:	48	None	1	1
Treated water:	48	None	49	None
Northfleet Pumping Station				
Raw water:	97	None	94	None
	2	1 to 2	8	2 - 90
Treated water:	99	None	102	None
Consumer's Premises				
Treated water:	-	-	2	None

APPENDIX II (continued)

WATER (continued)

Bacteriological Analyses (continued)

<u>Samples by the Council's Public Health Inspectors</u>	1962		1963	
	No. of Samples	E. coli type 1	No. of Samples	E. coli type 1
Consumer's Premises (Treated water)	33	None	26	None

Chemical Analyses

<u>Samples by Medway Water Board</u>	No. of Samples	Albuminoid Nitrogen p.p.m.	Temporary Hardness p.p.m.	Total Hardness p.p.m.
--	-------------------	----------------------------------	---------------------------------	-----------------------------

Hazelle Pumping Station

Raw water:	1962	None	-	-
	1963	1	None	252
Treated water:	1962	2	0. and .01	Av. 243
	1963	2	None	Av. 242

Northfleet Pumping Station

Raw water:	1962	2	0. and .02	Av. 248
	1963	5	None	Av. 249
Treated water:	1962	None	-	-
	1963	None	-	-

Lawn Road School Swimming Pool

1962 Number of samples - 4. E. coli. None.
Plate counts: Uncountable, 0, 1, 0.

1963 Number of samples - 10. E. coli. None.
Plate counts: 0, 0, uncountable, 0, 1, 0, 0, 0, 0, 0.

Shears Green School Swimming Pool

1962 Number of samples - 4. E. coli. None.
Plate counts: 2, 75, 2, 5.

1963 Number of samples - 4. E. coli in three was 0 and in one was 1.
Plate counts: 0, 0, 23, 6.

APPENDIX III - DRAINAGE

All houses within accessible distance of the sewer are being connected thereto at the Council's expense and during 1962 and 1963, 208 dwellings in Arcadia Road, Castlefields, Downs Road, Ellwill Way, Istead Rise, Lewis Road, Stoney Corner and Upper Avenue were connected to the sewer. The 295 new houses built in 1962 and the 193 built in 1963 were all connected to the sewer, with the exception of 5 which were drained to cesspools.

	Dec. 1961	Dec. 1963
Dwellings with water-closets discharging into the sewer	6,592	7,795
" " " " " into septic tanks	6	2
" " " " " into cesspools	341	143
" " chemical-closets	2	1
	<u>6,491</u>	<u>7,941</u>

Although there are 143 houses drained to cesspools, the number of cesspools is only 134 as some houses share their cesspools with neighbouring houses. There are now approximately 34 cesspools which never require emptying.

APPENDIX III - DRAINAGE (continued)

The following are the details of the work initiated by the Council's Public Health Inspectors during 1962 and 1963:-

	1962	1963
Drains repaired or reconstructed	6	6
Drains cleared	5	12
Gully traps repaired or renewed	-	1
Drainage works inspected	181	103
Tests applied to drains (excluding Council houses)	276	104

SEWAGE DISPOSAL WORKS. Five samples were taken from the effluent during 1962 and 9 in 1963 and the averages in p.p.m. below summarise the results:-

	1962	1963		1962	1963
Suspended Solids	62	78	Oxygen absorbed 4 hrs. @ 27°C.	30	31
Albuminoid Nitrogen	4	3	Oxygen absorbed 4 days @ 20°C.	85	168

The later results of 1963 were markedly better than those of early 1963.

APPENDIX IV.

FOOD HYGIENE

FOOD PREPARATION. Food premises inspected by the Council's Public Health Inspectors were:

	Premises	
	1962	1963
Bakehouses	3	3
Butchers	16	16
Cafes, restaurants, canteens etc.	27	29
Confectioners	23	23
Fish fryers and fishmongers	6	5
Greengrocers	15	16
Grocers	65	64
Ice-cream premises	63	61
Licensed premises (non-catering)	27	27

The number of inspections were: 325 357

The figure for ice-cream premises is the number of premises registered most of which were grocers or confectioners.

REGISTERED PREMISES. Section 16 of the Food & Drugs Act, 1955 requires certain premises to be registered. Those registered in 1962 and 1963 were:

	1962	1963
Sausage making and cooked meats	13	13
Curing and preservation of fish	5	5
Ice-cream storage and sale	63	61

Visits to these premises are included in the figures tabulated above.

NOTICES. As a result of the foregoing inspections 30 informal written notices were served and 27 were complied with in 1962 and 37 informal written notices were served and 31 were complied with in 1963. The following summarises the defects remedied.

	1962	1963
Premises and equipment cleansed, repaired or improved	10	19
Provision of first aid or facilities for cleanliness	11	14
Protection of food from risk of contamination	8	7
Repair or cleaning of sanitary accommodation	6	8
Miscellaneous	11	4

Certain notices were verbal and not written.

APPENDIX IV - FOOD HYGIENE (continued)

MILK. Regulations require this Council to register (a) dairies not being dairy farms and (b) distributors, i.e., dairymen other than dairy farmers.

The following are the figures for registrations:

	1961	1962	1963
Distributors registered	40	45	42
Dairies registered	1	-	-

On 1.1.61 the Kent County Council took over from this Council the duty to grant or refuse to grant, dealers' licences to distributors authorising the use of a special designation in relation to milk sold from premises in this district.

MEAT. There is no slaughterhouse in this district and therefore no meat inspection associated with slaughtering was done by the Council's Public Health Inspectors.

One slaughterman was licensed in 1962 and in 1963, the slaughtering being done outside this district.

SEIZURE OR SURRENDER OF UNSOUND FOOD. The following food was surrendered:

Meat			Other Foods	
1962	Canned meat	53 lbs.	-	
	Sausage skins	10 bundles	-	
1963	Poultry	1 carcass	Canned vegetables	4 lbs.
	Canned meat	24 lbs.	Canned fruit	6 lbs.
			Canned milk	1 lb.
			Ice cream	319 lbs.

FOOD UNFIT FOR CONSUMPTION EXPOSED FOR SALE. Items of food the fitness of which was the subject of complaint to this office by customers were:-

		1962		1963	
		Number.	Confirmed	Number.	Confirmed
Suspected of causing food poisoning		1	-	-	-
Tainted "off" or old		3	2	3	2
Moulds		-	-	1	1
Dirt		3	1	-	-
Insects or their larvae		2	2	2	2
Dirty milk bottles		3	3	1	1

LABORATORY EXAMINATIONS.

Ice cream. 46 samples were obtained and examined for cleanliness by the methylene blue test in 1962 and 45 in 1963.

Methylene blue decolourised in:		Provisional Grade	1962	1963
Over 4 hrs.	@ 37°C.	I	26	16
2½ - 4 hrs.	" "	II	13	20
0 - 2 hrs.	" "	III	1	6
Pre-incubation period *		IV	6	3

*i.e., 17 hours @ 20°C.

Suggested standard. About 50% of samples to fall into Grade I, 80% into Grades I or II, not more than 20% into Grade III, and none into Grade IV.

APPENDIX IV - FOOD HYGIENE (continued)

LABORATORY EXAMINATIONS. (continued)

Milk. All milk sold must be designated milk and regulations require dealers selling this milk to be licensed by the Food and Drugs Authority i.e., the County Council. The latter also sample designated milk and subject it to prescribed tests. The following are the results of the prescribed tests:

Year	Pasteurised Milk			Sterilised Milk		Tuberculin Tested and Untreated Milk	
	Samples Examined	Failed Phosphatase Test	Failed M.B. Test	Samples Examined	Failed Turbidity Test	Samples Examined	Failed M.B. Test
1962	35	Nil	Nil	12	Nil	-	-
1963	14	Nil	Nil	2	Nil	-	-

LEGAL PROCEEDINGS.

1962 Pasteurised milk containing soil etc. Proceedings were instituted under section 2 of the Food and Drugs Act, 1955. Fined £50, costs £3.15.0d. Appeal by defendant company allowed with 25 guineas costs.

Dirty milk bottles. Convictions under the Milk and Dairies Regulations 1959 having been obtained at the same time by the Borough where the bottling plant was situated, no further proceedings were initiated. A similar case initiated by that Borough resulted in a fine of £50 with 10 guineas costs.

1963 None.

APPENDIX V.

FOOD CONTENT.

SAMPLING. Details of sampling taken by the County sampling officers within Northfleet Urban District during 1962 and 1963 were as follows:

1962		1963	
Milks	41	Milks	35
Drugs	6	Drugs	6
Spirits	5	Spirits	5
Other samples	<u>34</u>	Other samples	<u>36</u>
	86		82

All these samples taken for analysis were satisfactory.

CUSTOMERS' COMPLAINTS.

1962 Milk. Dirty caps inside bottle.
Bread. Contained silver paper.

1963 Bread. Contained string.
Luncheon meat. Contained a can opening key.

Cautions were issued to the offenders in these cases.

LEGAL PROCEEDINGS. None.

APPENDIX VI.

AIR HYGIENE

DOMESTIC. In 1961 the Minister confirmed without modification the Northfleet No. 1. Smoke Control Order to come into operation in October, 1961. The number of dwellings in the area was 903. The total estimated cost of the works for converting 157 dwellings was £1,185. The actual cost was £463 for which there was an exchequer contribution of £209.

In 1962 the Minister confirmed the Northfleet No. 2 Smoke Control Order with the modification that it should come into operation on the 1st July, 1963. The number of dwellings in the area was 407. The total estimated cost of the works for converting 384 dwellings was £3,169. The actual cost was £2,328 for which there was an exchequer contribution of £931.

INDUSTRIAL. Complaints regarding smoke or grit nuisances were received from residents in the district. The emissions which caused these nuisances appeared to arise from the following industries:

1962	Paper manufacture	3	occasions
	Electricity generating	2	"
	Furniture manufacture	1	"
	Bonfires	1	"
1963	Electricity generating	1	"
	Shipping	2	"
	Paper manufacture	2	"
	Pulverised fuel ash	1	"

In 1962 and 1963 five and one complaints respectively were received of oil smells thought to be emitted from oil storage facilities of the cement industry. Dust from cement works continued to attract comment as a nuisance.

MEASUREMENTS. Monthly analyses of deposit and exposed lead dioxide with the daily measurements of smoke and acidity were included in the readings distributed by the Thames-side Joint Committee for the Abatement of Atmospheric Pollution. A selection of the smoke and sulphur dioxide readings relating to the vicinity and months of most interest to us is given in the accompanying table. The readings of Metropolitan Islington are given for comparison.

To provide an idea of the trend of the dust nuisance here the following procedure has been used to provide the accompanying graphs:

(i) The monthly deposits of each gauge have been totalled to give the readings for six month periods for each gauge. (ii) The readings east of the vicinity of the cement works have been totalled for all such gauges. (iii) The readings west of the works have been similarly totalled. (iv) These six-monthly totals have been plotted on a graph whatever the absolute figure. As all Thames-side gauges are included, the trend for the whole area is portrayed.

To observe the trend in our immediate vicinity there have been selected four gauges in our neighbourhood to the lee of the works in the prevailing wind. In using "Tons per Square Mile" as units it might be useful to bear in mind that the total deposit in rural areas is around 60 tons per square mile per six months.

APPENDIX VI. AIR HYGIENE (continued)

VOLUMETRIC INSTRUMENT MEASUREMENTS

Micrograms per cubic metre												
Northfleet U.D. Site 5				Dartford Borough Site 6			Dartford R.D. Site 8			Islington Met.B. Site 1		
Smoke	SO ₂	Ratio		Smoke	SO ₂	Ratio	Smoke	SO ₂	Ratio	Smoke	SO ₂	Ratio
Average concentration												
1961/62												
Jan	95	140	0.68	143	186	0.77	97	139	0.77	88	252	0.35
Feb	100	226	0.44	131	223	0.59	77	141	0.55	53	201	0.26
Mar	105	147	0.71	129	195	0.66	95	155	0.61	152	270	0.56
S.	22	70	0.31	39	94	0.41	26	58	0.44	52	116	0.44
W.	-	-	-	140	180	0.77	-	-	-	111	264	0.42
1962/63												
Jan	169	325	0.52	207	213	0.57	156	288	0.54	336	413	0.81
Feb	149	187	0.80	213	294	0.72	151	211	0.72	301	320	0.94
Mar	40	65	0.62	59	105	0.56	41	65	0.63	143	161	0.89
S.	30	79	0.38	39	100	0.39	31	63	0.49	63	107	0.59
W.	129	185	0.70	157	254	0.62	-	-	-	266	326	0.82

Highest daily concentration

1961/62												
Jan	301	498		687	739		400	965		236	542	
Feb	330	625		374	475		189	294		157	508	
Mar	345	329		436	389		345	437		249	520	
S.	70	289		123	288		190	192		200	349	
W.	586	625		714	739		461	965		443	1042	
1962/63												
Jan	682	603		642	949		484	547		1128	1747	
Feb	381	427		343	474		239	544		522	640	
Mar	192	264		280	301		190	210		362	393	
S.	112	623		137	491		123	400		245	391	
W.	900*	1068*		946*	1852*		1258*	1305*		1680*	3303*	

*The December 1962 fog. S = Summer (April to Sept) W = Winter (Oct to March)

LEAD DIOXIDE INSTRUMENT

Milligrams SO₃ per 100 sq.cms.lead dioxide surface per day

		Northfleet U.D. Site 1		Dartford B. Site 4		Dartford R.D. Site 8		Islington Met.B. Site 1	
1961/62	Jan	1.1		1.6		1.0		2.8	
	Feb	2.3		2.8		1.2)		3.5	
	Mar	1.2		2.0		1.2)		3.4	
	Year	1.1		1.4		-		1.8	
1962/63	Jan	3.1		3.4		2.0		3.1	
	Feb	3.0		3.0		1.4		3.0	
	Mar	0.9		1.6		0.7		2.0	
	S.	0.6		1.1		0.4		1.1	
	W.	2.0		2.5		1.3		2.4	

* The December 1962 fog. Since these figures were prepared amended calculations for smoke have been obtained from D.S.I.R. These mainly apply to large readings. Revised calculations of highest daily concentrations in the four areas listed for Oct.'62-March '63 are 1055, 1166, 1788 and 3904 respectively.

APPENDIX VI. AIR HYGIENE (continued)

SMOKE AND SO₂ POLLUTION 1958/63

Year ended	Dartford Borough	Dartford R.D.	Dartford R.D.	Northfleet U.D.	Islington Met. B.	Islington Met. B.	Sheffield C.B.
March	6 (D2)	8 (B3)	7 (X)	5 (X)	1 A2	2 A1	60 (01)
	Market St.	White Oak	Horns X.	Town Hall	Tr.Centre	Town Hall	Redmires

<u>Smoke.</u>	$\mu\text{g}/\text{m}^3$.	Averages of monthly averages of daily readings					
Six months April to September							
1958	50	-	-	-	90	90	
1959	44	-	-	-	86	71	
1960	✕	-	29	-	70	73	
1961	43	-	24	32	63	64	
1962	39	26	46	22	52	56	
1963	39	31	8	30	63	64	
Six months October to March							
1958	160	-	-	-	360	330	
1959	174	-	131	-	✕	385	
1960	✕	-	65	103	252	267	
1961	132	88	76	98	192	194	
1962	140	✕	70	102✕	111	✕	
1963	157	124✕	102	129	266	252	
Year April to March							
1958	105	-	-	-	225	210	
1959	109	-	-	-	✕	228	
1960	✕	-	47	-	161	176	
1961	88	-	50	65	128	129	
1962	90	✕	58	62✕	82	✕	
1963	98	77✕	55	80	164	158	

<u>SO₂</u>	<u>μg/m³.</u>	Averages of monthly averages of daily readings					
Six months April to September							
1958	86	-	-	-	114	143	-
1959	66	-	-	-	133	146	39
1960	✕	-	71	-	140	151	57
1961	92	-	45	58	122	123	86
1962	94	58	61	70	116	132	57
1963	100	63	68	79	107	126	✕
Six months October to March							
1958	200	-	-	-	344	400	-
1959	220	-	112	-	✕	489	94
1960	✕	-	91	114	273	339	90
1961	169	107	91	91	267	328	94
1962	180	✕	88	142✕	264	✕	78
1963	254	185✕	145	185	326	395	114
Year April to March							
1958	143	-	-	-	228	286	-
1959	143	-	-	-	✕	318	66
1960	✕	-	81	-	206	245	74
1961	130	-	68	74	194	226	90
1962	137	✕	74	106✕	190	✕	68
1963	177	124✕	107	132	216	260	✕

APPENDIX VI. AIR HYGIENE (continued)

SMOKE AND SO₂ POLLUTION 1958/63 (continued)

Year ended	Dartford Borough	Dartford R.D.	Dartford R.D.	Northfleet U.D.	Islington Met. B.	Islington Met. B.	Sheffield C.B.
March	6 (D2)	8 (B3)	7 (X)	5 (X)	1 A2	2 A1	60 (01)
	Market St.	White Oak	Horns X.	Town Hall	Tr.Centre	Town Hall	Redmires

Smoke/SO₂ ratios of above concentrations

Six months April to September

1958	.58	-	-	-	.79	.63	-
1959	.67	-	-	-	.65	.49	.36
1960	⌘	-	.41	-	.50	.49	.61
1961	.47	-	.54	.55	.52	.52	.36
1962	.41	.44	.75	.31	.44	.42	.54
1963	.39	.49	.12	.38	.59	.51	⌘

Six months October to March

1958	.80	-	-	-	1.05	.83	-
1959	.79	-	1.17	-	⌘	.79	.87
1960	⌘	-	.71	.90	.92	.79	.76
1961	.78	.82	.84	1.08	.72	.59	.53
1962	.77	⌘	.79	.72⌘	.42	⌘	1.00
1963	.62	.67⌘	.70	.70	.82	.64	.82

Year April to March

1958	.74	-	-	-	.99	.73	-
1959	.76	-	-	-	⌘	.72	.71
1960	⌘	-	.58	-	.78	.70	.70
1961	.68	⌘	.73	.88	.66	.57	.44
1962	.65	⌘	.78	.58⌘	.43	⌘	.79
1963	.55	.62⌘	.51	.61	.76	.61	x

National Survey Site Classification

- A1 Residential area with high-density housing (probably terraced) or with medium-density housing in multiple occupation, in either case surrounded by other built-up areas.
- A2 Predominantly A1, but interspersed with some industrial undertakings.
- B3 Residential area with medium-density housing surrounded by or interspersed with areas with low potential A.P. output (parks, fields, coast), or any residential area with low-density housing.
- D2 Small town centre; limited commercial area mixed with old residential housing and possibly minor industry.
- 01 Open country but not entirely without source(s) of pollution, e.g., airfields.
- X Unclassified site, or mixed area.

None of the above gauge sites was in a smoke control area before the end of 1963, although there may have been a smoke control area within the Local Authority boundary.

- = Use of gauge not begun.

⌘ Unless the gauge runs without a more-than-5 days-stop and runs for a minimum number of days in a month the average for that month is excluded from the monthly averages listed in D.S.I.R's yearly tables. Unless an average for every month is given no six-monthly or yearly average is given in these tables. Hence a mechanical defect or Bank Holiday which prevented daily readings for more than 5 continuous days meant that averages for that six months and year are not published. Where figures are given with the asterisk they are from local calculations.

APPENDIX VI. AIR HYGIENE (continued)

SMOKE AND SO₂ POLLUTION FOG READINGS

Dartford Borough 6 (D2) Market St.	Dartford R.D. 8 (B3) White Oak	Dartford R.D. 7 (X) Greenhithe	Northfleet U.D. 5 (X) Town Hall	Islington M.B. (D.S.I.R.) 2 (A1) Town Hall
---	---	---	--	---

Smoke /ug/m³. Interim Calibrate Curve (i.e. revised)

Dec. 1962	2	282/	168/	213/	229/	-
	3	282/	168/	213/	229/	575
	4	348	277	337	473	1264
	5	1166*	1788*	1209*	1055*	3904
	6	246	431	410	460	1196
	7	312	371	416	550	1599
	8	113	481/	34	64/	207
Jan. 1963	22	112	49	71	80	317
	23	348	308	361*	263	679
	24	608*	432	463*	691*	1355
	25	185	94	115	N	858
	26	634*	251/	35	319/	560
	27	166/	251/	166/	319/	318
	28	166/	251/	166/	319/	285
	29	178	108	190	166	308

SO₂ /ug/m³.

Dec. 1962	2	184/	175/	92/	182	-
	3	184/	175/	92/	182/	720
	4	287	292	148	316	1341
	5	1852	1305	815	1068	3340
	6	864	726	678	689	2143
	7	839	529	391	535	2262
	8	202	78/	81	123	431
Jan. 1963	22	264	146	182	159	453
	23	393	399	335	382	814
	24	464*	547	296	430	1585
	25	505	409	440	586	1621
	26	949*	433/	140	467	515
	27	346/	433/	126/	467	266
	28	346/	433/	126/	467	285
	29	299	297	153	209	255

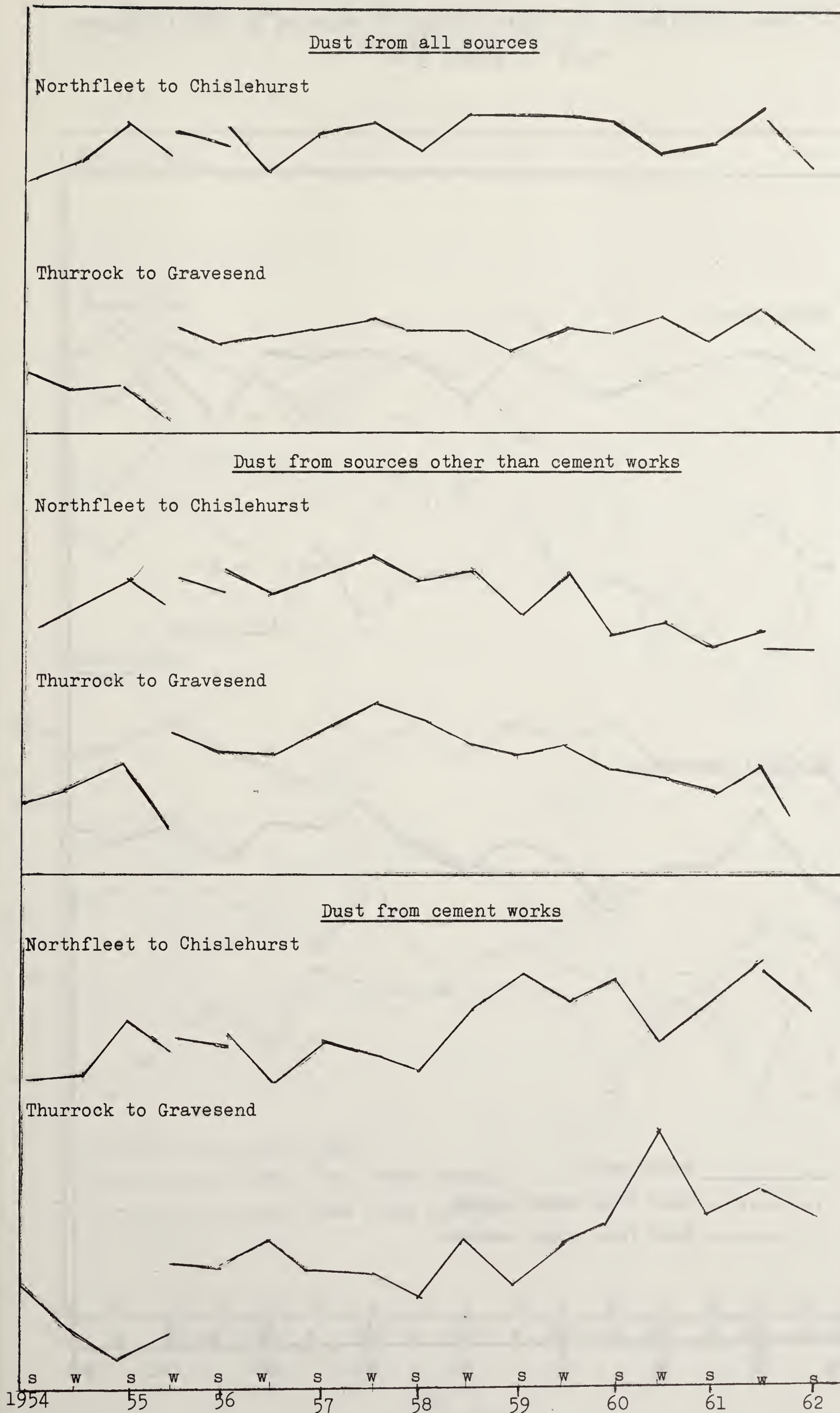
		Smoke/SO ₂	Ratio		
Dec. 1962	2	1.53/	.96	2.32/	-
	3	1.53/	.96	2.32/	.80
	4	1.21	.95	2.28	.94
	5	.63	1.37*	1.48	1.18
	6	.28	.59	.60	.56
	7	.37	.70	1.06	.71
	8	.56	.62/	.42	.48
Jan. 1963	22	.42	.34	.39	.70
	23	.89	.77	1.08	.83
	24	1.31*	.79	1.56	.85
	25	.37	.23	.26	.53
	26	.67*	.58/	.25	1.09
	27	.48/	.58/	1.32	1.20
	28	.48/	.58/	1.32	1.00
	29	.60	.36	1.24	1.21

* Dark stain

/ Average of two or three days continuous samples.

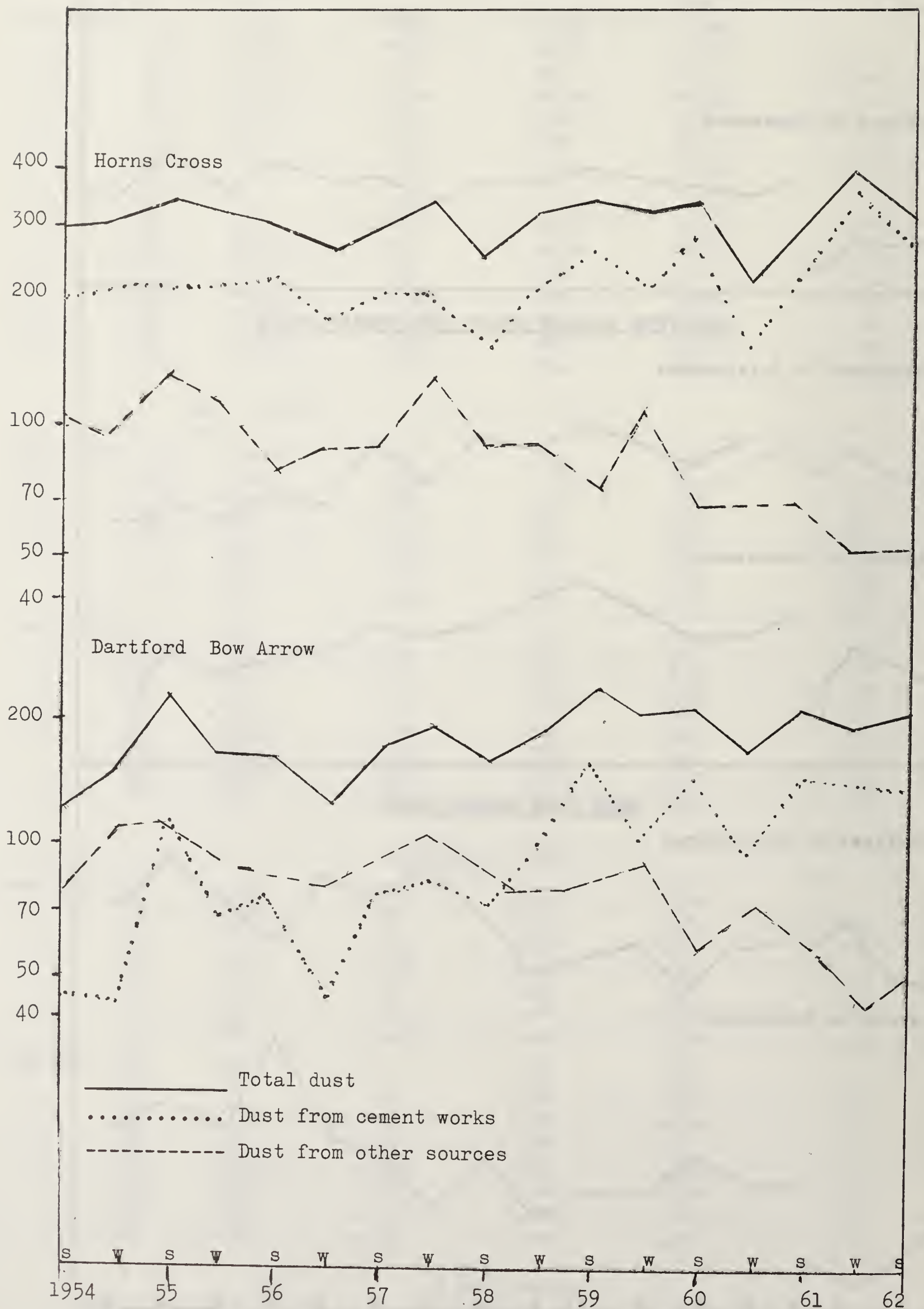
TREND OF DEPOSITED DUST. THAMES-SIDE (i)

Totals of 6 monthly readings of deposit gauges



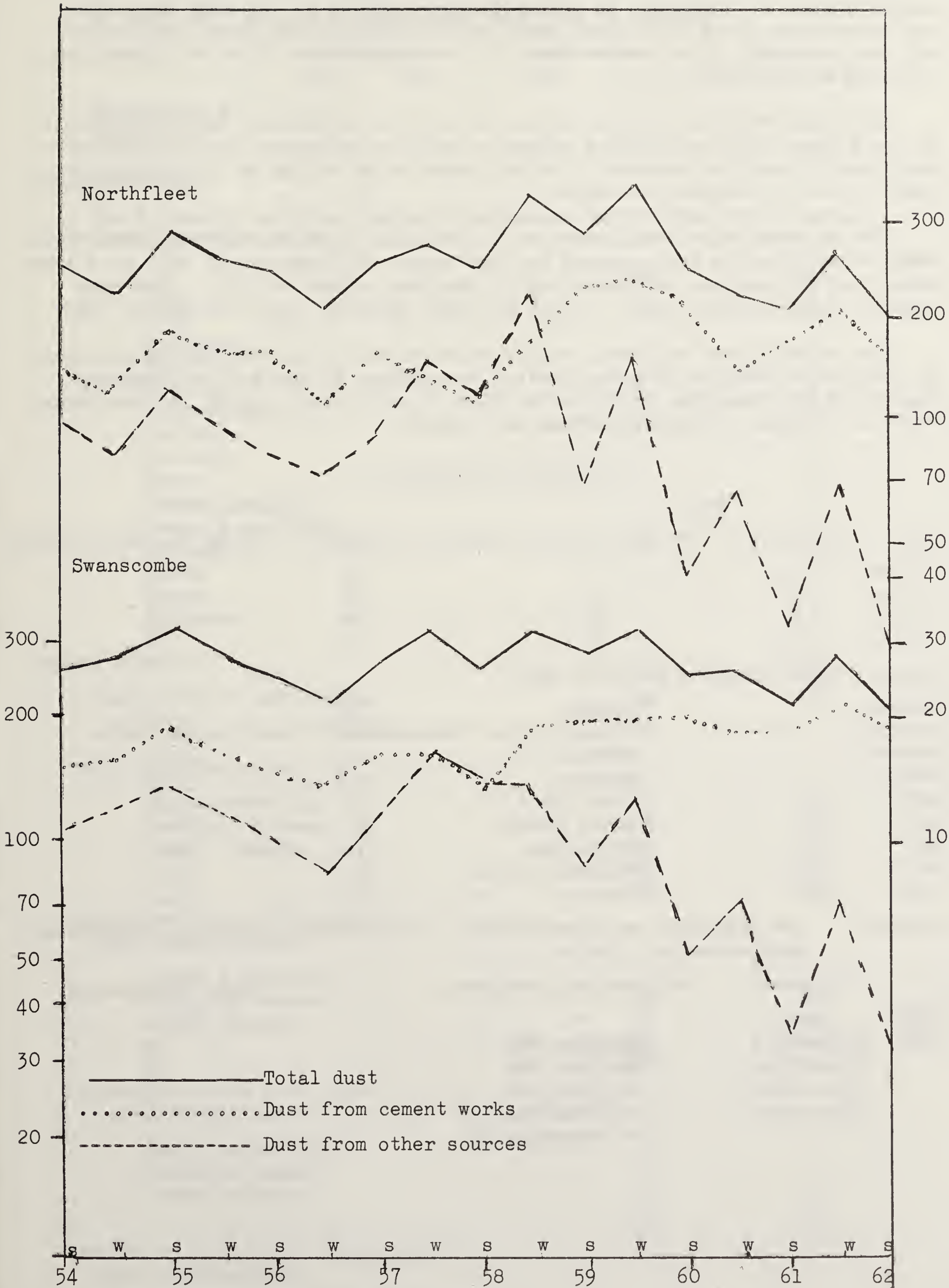
TREND OF DEPOSITED DUST THAMES-SIDE (ii)

Dust deposited in six month periods as measured by certain gauges
 "Tons per square mile"



TREND OF DEPOSITED DUST THAMES-SIDE (ii)(contd)

Dust deposited in six month periods as measured by certain gauges
"Tons per square mile"



APPENDIX VII - RADIOACTIVITY

FOODSTUFFS. The County Analyst referring to 1963 and the whole County wrote -

"It will be remembered that milk and dairy products are the main source of radioactive material in the diet and therefore special emphasis has been placed on milk, the samples examined being a composite of all those received under the Food and Drugs Act each month.

The resumption of the testing of atomic weapons in the autumn of 1962 caused a rise in the amount of contamination, but due to the time lag before the debris from these explosions began to sink down to the lower atmosphere and the unusually dry winter of 1962-3, the effect of the rise was spread over a period of some months.

In the absence of further weapon tests it is anticipated that the amounts of the longer lived radioactive elements, such as Strontium 90 will gradually decrease, although a temporary rise may occur in the spring of 1964 due to the annual cycle of weather and crops.

The expected more rapid decrease in the amounts of the shorter lived radioactive elements has occurred and the amount of Strontium 89 fell to a level below that of accurate determination by the late autumn of 1963. The much shorter lived element Iodine 131 has not been detected since the end of 1962.

The significance of levels of Strontium 90 found in foods may be assessed by comparison with the "working levels" recommended by the Medical Research Council of 400 Strontium Units in the diet of individuals and of 130 Strontium Units in the diet of the population as a whole".

PICOCURIES STRONTIUM 90.

1963	Milk		Canteen meals	
	Per litre.	Per gm Ca.(Sr.90 units)	Per kilo.	Per gm Ca.(Sr.90 units)
1st qr.	10	9	15	18
2nd qr.	23	20	20	24
3rd qr.	34	30	26	33
4th qr.	33	28	34	38
Month.	Other specific items of food.			
February		Carrots	2.4	7.5
February		Cabbage	7.7	10.7
February		Potatoes	1.4	15.0
March		Sprouts	16.6	35.0
May		Plain flour	5.9	4.0
May		Spring greens	52.0	28.0
May		Watercress	67.0	45.0
May		Wholemeal flour	33.0	27.0
June		Lettuce	70.0	90.0

INDUSTRY. The following were registered by the Ministry under the Radioactive Substances Act, 1960 -

	Premises.	Radioactive substance.	Max. Millicuries.
1962	None	-	-
1963	Paper Mill	Thallium 204	20
	Paper Mill	Thallium 204	50
	Paper Mill	Thallium 204	165
	(Research)	or Promethium 147	20
		or Strontium 90	30

APPENDIX VIII - DISINFECTION, DISINFESTATION & RODENT CONTROL

DISINFECTION

Northfleet Urban District Council have an arrangement with Swanscombe Urban District Council whereby facilities for disinfection and disinfestation of premises and articles are provided by us on a rechargeable basis. Transport for the articles is provided by Northfleet.

A similar arrangement with Strood R.D. Council came to an end in January, 1963.

In 1962 and 1963 these facilities were used as follows:-

	Northfleet		Swanscombe		Strood	
	1962	1963	1962	1963	1962	1963
Tuberculosis	3	-	-	-	-	-
Scabies	3	-	-	4	-	-

DISINFESTATION

The following were the number of occasions when advice was given or disinfestation carried out:-

	1962	1963
Ants	5	9
Bats	-	1
Bed-bugs	6	7
Bees	1	1
Beetles	1	1
Cockroaches	1	2
Crickets	1	-
Earwigs	-	1
Fleas	1	3
Foxes	-	1
Maggots and flies	2	3
Pigeons	4	3
Rooks	-	1
Wasps	2	7
Woodworm	-	2

RODENT CONTROL -	1962	1963
Complaints of infestation	134	125
Infestations found by independent survey	18	5
Properties inspected:		
Local authority	14	16
Dwelling houses	473	448
Other premises	296	467
	<u>783</u>	<u>931</u>
Properties found with minor rat infestations:		
Local authority	-	1
Dwelling houses	85	83
Other premises	15	9
	<u>100</u>	<u>93</u>
Properties found with minor mice infestations:		
Local authority	-	-
Dwelling houses	17	5
Other premises	3	3
	<u>20</u>	<u>8</u>
Properties found with major rat or mice infestations	-	-
The infested properties were treated.		

APPENDIX IX - HYGIENE OF PLACES OF WORK.

FACTORIES. The Council enforces the provision of sanitary conveniences in all factories. In factories without mechanical power the Council also enforces the provision of adequate cleanliness, temperature, ventilation and drainage and freedom from overcrowding. The Council keeps a register of outworkers.

	1962	1963
Factories without mechanical power on register	1	1
" with " " " "	51	51
Other premises in which provision of sanitary accommodation is enforced by L.A. e.g. Building sites	27	24
Inspections	109	78
Defects found	14	11
Written notices served	6	6
Outworkers in Northfleet U.D.	6	11

SHOPS. There are some 225 shops and 30 public houses in Northfleet. The total number of inspections for the purpose of ensuring compliance with the Shops Act, 1950 by the Council's Public Health Inspectors for the years 1962 and 1963 were 181 and 97 respectively.

APPENDIX X - NOISE.

The following complaints of noise nuisance were received:

	1962	1963
Industrial premises	6	2
Barking dogs	3	-
Ice cream vendors' chimes	1	3
Parking of vehicles at night	-	1

APPENDIX XI - PUBLIC CLEANSING.

The Council's Public Cleansing Service is under the direction of the Council's Chief Public Health Inspector. The following amounts of refuse were collected and disposed of:

1962	11,686 tons	1963	12,318 tons
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The following were the number of occasions on which cesspools were emptied:

1962	357	1963	181
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Joint Controlled Tipping Scheme. The Joint Tipping Scheme was continued during 1962 and 1963. It serves Gravesend Borough and Northfleet and Swanscombe Urban Districts.

Cost. (From Abstract of Accounts)

	Expenditure		Income	
	1962-3	1963-4	1962-3	1963-4
	£	£	£	£
Cesspool emptying	1,277	934	56	51
House and trade refuse collection	14,841	15,885	48	124
Disposal: Joint Tip	4,711	4,260	3,686*	3,385*
Salvage of waste	1,333	1,300	1,212	1,105
Street and gully cleansing	3,776	4,348	1,025	1,233
*Includes contributions:		Gravesend	2,023	1,854
		Swanscombe	288	253

PUBLIC HEALTH COMMITTEE

May 1962 - April 1963

Councillor Mrs. B.E. Barker (Chairman)

" T.S. Codley

" C.A. Hall

" J.F. Little

" G.A.T. Prescott

" A. Wright

Co-opted

Members: Mrs. I. Walter

Mr. A.J.C. Farlow

May 1963 - April 1964

Councillor Mrs. B.E. Barker (Chairman)

" Mrs. P.E. Blake

" T.S. Codley

" J.F. Little

" D.H.T. Payne

" G.A.T. Prescott

" A. Wright

Co-opted

Member: Mrs. I. Walter

Clerk and Solicitor to the Council

Drewery F. Bunkall

PUBLIC HEALTH OFFICERS

Medical Officer of Health (Part time)

Chief Public Health Inspector

Additional Public Health Inspector

Student Public Health Inspector

Clerical Assistants - Senior

- Junior

Rodent Officer (Part time)

J.H. Hudson

J.S. Cowpland

R.E. Richards

N.G. Philp (until 19.5.63)

A.A. Mills (from 1.4.63)

Miss C.E. Keen

Miss W.H. Stowers

J. Brown



